PB91-126003

Toxic Air Pollutant Emission Factors A Compilation for Selected Air Toxic Compounds and Sources, Second Edition

Radian Corp., Research Triangle Park, NC

Prepared for:

Environmental Protection Agency, Research Triangle Park, NC

Oct 90

U.S. Department of Commerce
National Technical Information Service
NTIS

PB91-126003

TOXIC AIR POLLUTANT EMISSION FACTORS - A COMPILATION FOR SELECTED AIR TOXIC COMPOUNDS AND SOURCES, SECOND EDITION

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SPRINGFIELD, VA 22161

TECHNICAL REPORT DATA
(Please read Instructions on the reverse before complet

1. REPORT NO. EPA-450/2-90-011	2.	3. PB91-126003
4. TITLE AND SUBTITLE Toxic Air Pollutant Emission Factors - A Compilation For Selected Air Toxic Compounds And Sources, Second Edition		5. REPORT DATE October 1990 6. PERFORMING ORGANIZATION CODE
7. AUTHOR(S) Anne A. Pope, U.S. EPA & Garry R. Brooks, Patrick F. Carfagna, & Susan K. Lynch, Radian		8. PERFORMING ORGANIZATION REPORT NO.
9. PERFORMING ORGANIZATION NAME AND ADDRESS Radian Corporation Post Office Box 13000 Research Triangle Park, NC 27709		10. PROGRAM ELEMENT NO. 11. CONTRACT/GRANT NO. 68-02-4392
12. SPONSORING AGENCY NAME AND ADDRESS U.S. Environmental Protection Agency OAR, OAQPS, AQMD, NPPB, PCS (MD-15) Research Triangle Park, NC 27711		13. TYPE OF REPORT AND PERIOD COVERED Final 14. SPONSORING AGENCY CODE

15. SUPPLEMENTARY NOTES
EPA Project Officer: Anne A. Pope

16. ABSTRACT

This report presents the second edition of the Toxic Air Pollutant Emission Factor Compilation that contains emission factors for selected air toxic compounds and sources, and associates the factors to levels of source activity. The emission factors, compiled from a review of the literature, are sorted by pollutant and source. Each factor is identified by pollutant name, CAS number, process and emission source descriptions, SIC code and SCC's. This second edition revises and expands the report, Toxic Air Pollutant Emission Factors - A Compilation For Selected Air Toxic Compounds And Sources, Second Edition, EPA-450/2-88-006a. A software system, XATEF, containing the factors, has been developed for easy access and updating of the data. Use of the system is explained in the EPA report, Crosswalk/Air Toxic Emission Factor Data Base Management System User's Manual. EPA is making available the system and data base records to agency users upon request.

The purpose of this report is to offer a technical service to air pollution control agencies in performing preliminary estimates of air toxics emissions. The emission factors are not intended to provide exact estimates of releases of air toxics from specific facilities.

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
Air Toxics Emission Factors Toxic Emissions		

18. DISTRIBUTION STATEMENT Unlimited	19. SECURITY CLASS *(This Report)* Unclassified	21. NO. OF PAGES
	20. SECURITY CLASS *(This page)* Unclassified	22. PRICE

EPA Form 2220-1 (Rev. 4-77) PREVIOUS EDITION IS OBSOLETE

EPA-450/2-90-011

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This report has been reviewed by the Office of Air Quality Planning and Standards, U. S. Environmental Protection Agency, and has been approved for publication. Mention of trade names or commercial products does not constitute endorsement or recommendation for use.

EPA 450/2-90-011

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SECTION 1. INTRODUCTION

The Environmental Protection Agency (EPA) and State and Local air pollution control agencies are in the process of developing programs to control air toxics. The development of an air toxics program requires information about the types, sources, and emissions of pollutants in a geographic area. One of the major components of an air toxics program is an assessment of the quantities of toxic compounds present in an area. Specific emissions measurements are generally the best and most accurate way to quantify emissions; however, measurement data are not always available. An alternate method of estimating air toxics emissions is by using emission factors. This report presents a compilation of emission factors for selected toxic air pollutants and sources of toxic air pollutants. The purpose of this report is to offer a technical service to air pollution control agencies and others in performing preliminary estimates of air toxics emissions. Users are provided information so that they may review the referenced literature where clarification or further details are needed.

An emission factor relates the quantity of a pollutant released to the atmosphere with a source activity (e.g., combustion, storage, handling, equipment leaks, processes, etc.). Emission factors are usually expressed by units of mass of pollutant emitted per unit of mass, volume, heat input, distance, or duration of a process that emits the pollutant (e.g., lb pollutant emitted per ton of product). Sections 3 and 4 present listings of emission factors for selected toxic air pollutants and sources and associates the emission factors to levels of source activity for pollutants. For example, in the smelting of copper, trace elements such as arsenic or nickel may be emitted. An emission factor such as "X" lb nickel/ton blister copper produced, could be used to estimate nickel emissions from the smelter.

In order to offer assistance to agencies and others in estimating emissions of air toxics, EPA in October 1988 published a report entitled **Toxic Air Pollutant Emission Factors For Selected Air Toxic Compounds And Sources** (EPA-450/2-88-006a). The emission factors in the 1988 edition were obtained from journal articles and reports identified by a computerized literature search and from published and unpublished EPA reports. The computerized literature search accessed the following databases - Chem Abstracts, NTIS, Enviroline, Pollution Abstracts, Compendex, Environmental Bibliography, EI Engineering Meetings, DOE and APTIC.

Since the publication of the 1988 compilation (first edition), EPA has compiled additional emission factors into this Second Edition. The Second Edition updates and expands the first edition to include more than 6000 factors for approximately 270 compounds and 470 source categories. To update and expand the first edition, the data in the 1988 compilation were reviewed and some factors

were revised based on comments received from users. New factors were obtained primarily from EPA Background Information Documents (BIDS) prepared in support of New Source Performance Standards (NSPS) and National Emission Standards for Hazardous Air Pollutants (NESHAP), EPA Control Technology Center (CTC) documents, Office of Research and Development (ORD) reports, EPA's series of "Locating and Estimating Air Toxic Emissions From (or of) (Source Category or Substance)" reports, and other published and unpublished EPA reports. In addition, other emissions reports have been obtained from state, local and international agencies, trade associations, and journals that have not yet been included in this second edition. Plans call for this second edition to be further updated with these reports and articles as well as other emission factors that have been submitted by users. New references added to the second edition are numbered from 166 to 214 in the List of References. A bibliography of related reports obtained and reviewed but which did not contain emission factors is included in Appendix C.

Section 2 of this report describes the components of the emission factor tables and explains the uses and shortcomings of the information. Sections 3 and 4 contain the emission factor tables. Section 3 presents the emission factor data sorted by pollutant names. Section 4 presents the same factors sorted by industrial process (e.g., smelting, petroleum refinery, oil combustion, dry cleaning, etc.).

The EPA has also revised the Air Toxic Emission Factor (ATEF) data base management system that accompanied the first edition report. The ATEF data base has been revised and combined with the Crosswalk (XWALK) data base to form the "XATEF" data system. The XATEF system containing both air toxics emission factor data and air toxic pollutant/source crosswalk data has been developed to allow for easy access to the data. The software is an IBM™ personal computer (PC) based application that combines the air toxic emission factor data (formerly ATEF) and crosswalk data (formerly XWALK) into one database. The XATEF presents emission factors associated to pollutant names, Chemical Abstracts Service (CAS) numbers, industrial process descriptions, Standard Industrial Classification (SIC) codes and descriptions, specific emission source descriptions, Source Classification Codes (SCCs) and descriptions, notes on the process control or development of factors, and references. The XATEF presents crosswalk data consisting of air toxic compounds names, CAS numbers, SIC codes and descriptions, SCCs and descriptions, and references. The data management system allows one to search and download data to print or data files. The system has been designed specifically for easy data manipulation by fairly inexperienced users. No specific programming knowledge is required to search or download data. Use of the XATEF system is explained in a user's manual entitled **Crosswalk/Air Toxic Emission Factor Data Base Management System User's Manual**, EPA-450/2-89-018. The user's manual and data system

are available to State and local agencies from EPA upon request. Users will need an IBM™ AT PC or compatible machine that runs MS-DOS™ or PC-DOS™ version 3.0 or later; at least 640 KB of free random access memory (RAM); a fixed disk with at least 20 MB of storage; and a 5 1/4 inch external disk drive. Requests for the system and user's manual can be made by contacting the Noncriteria Pollutant Programs Branch, U.S. EPA, OAQPS, MD-15, Research Triangle Park, North Carolina 27711, or by calling (919) 541-5373 or (FTS) 629-5373.

This air toxic emission factor compilation will be updated and expanded as new information is obtained on process descriptions, operating practices, control measures, and emissions data. Comments on the usefulness of this document are welcomed as is any emissions information that would allow EPA to update and expand this list of toxic air emission factors.

SECTION 2. USE OF EMISSION FACTORS IN COMPILATION

The emission factors compiled in this report are presented in Sections 3 and 4. The data included in these sections for each factor include:

- chemical name and CAS number,
- industrial process description,
- specific emission source description,
- SIC code,
- SCC,
- notes, and
- references.

CAS numbers, SIC codes, and SCC's are used in this compilation to provide a means of identifying in standard terminology, pollutants, industrial processes and specific emission processes/sources. For some substances, CAS numbers are not available such as for polycyclic organic matter. If CAS numbers are not available, no CAS numbers are assigned in the tables. Similarly, when SIC codes and SCC's are not available for some sources and processes, they are not included in the tables. For some sources, the SIC codes and SCC's are truncated in the tables based on available data. SIC codes may be shown as two, three or four digit numbers based on available information. SCC's may also be truncated to less than the full eight digits.

Appendix A presents the air toxics that have factors in the compilation. Table A-1 lists alphabetically the air toxics and their respective CAS numbers and chemical synonyms, if available, contained in this edition. Table A-2 lists the air toxics for which emission factors have been compiled by CAS number. Because available information on air toxics emissions is limited, emission factors are only provided for selected air toxic compounds and not for all identified air toxics. The list of air toxics in Appendix A represents air toxics for which emissions data are available.

The SIC codes associated to the factors are broad descriptors of industry segments that are used throughout the Government to define industries in accordance with the composition and structure of the economy. For this reason, the SIC codes may not represent specific emitting sources. In this compilation, SIC codes are unavailable for some industrial processes such as wood combustion.

The SCC's represent processes or functions within a source category associated with a point of air pollutant emissions. The National Emission Data System (NEDS) uses SCC's to associate criteria pollutants with emission factors for various sources. SCC's are included in this document primarily for identification purposes. The units for factors in Sections 3 and 4 do not necessarily correspond to the units of factors listed in NEDS having identical SCC's. For example, the toxics factor for carbon

black manufacturing may show "X" lb POM emitted/ton product from the dryer, whereas the NEDS factor for the same SCC is "X" lb particulate matter/ton carbon black produced. Users should be aware of this difference and consider it if applying these emission factors to the SCC's in NEDS. In the XATEF data base management system, the SCC's associated to toxics factors that do not correspond to SCC's in NEDS or SCC's that have been truncated are noted. As new SCC's are assigned for toxics in NEDS, it is anticipated that future updates of this report will use SCC's consistent with NEDS.

Brief descriptions of the industrial processes and specific emission sources are included for each emission factor in Sections 3 and 4. Industrial process descriptions define source categories and specific emission sources refer to operations within a source category. An example of an industrial process is a petroleum refinery, and specific emission sources within a petroleum refinery include catalytic crackers, storage tanks, and equipment leaks. Appendix B contains a list of the industrial processes that have emission factors in the compilation. For most available SIC codes and SCC codes associated with factors, the industrial process descriptions are similar to SIC code descriptions and the specific emission source descriptions are similar to SCC descriptions. Appendix D presents SIC code descriptions and Appendix E lists SCC descriptions.

The emission factors in Sections 3 and 4 are listed usually in terms of mass of pollutant per mass of product produced (i.e., 0.8 lb ammonia/ton urea product). When no other data are available, some factors are presented in units of mass per time (lb/sec, lb/day, lb/hr, etc). Other factors are presented in typical units specific to source categories. For example, factors for combustion sources are shown with units of lb/million BTU's. Most units are presented in American engineering units (lb, foot, ton, etc.) to be consistent with NEDS criteria factors. Some factors have not been converted from metric units because they are conventionally expressed in metric units such as ng/cubic meter or mg/amp hr.

Sections 3 and 4 also contain additional information in the "Notes" part of each emission factor listing. Brief descriptions concerning the derivation of emission factors (mass balance, test data, engineering judgment) and any assumptions tat have been made to derive the factors are shown in the "Notes". If an averaged factor has been listed, the range is shown in this column. For some toxic air pollutants, emission factors associated with processes or operations are further characterized in the "Notes" by the presence or absence of emission reduction techniques or controls. For many of the controlled operations, the type of emission reduction control is identified. However, the emission reduction techniques in this report do not necessarily represent the best available control technology (BACT) or reasonably available control technology (RACT).

References are included for each factor in this compilation. The reader is encouraged to consult the references for more detailed information on the factors.

The quality of emission factors presented in this compilation varies considerably. Emission factors are derived in a variety of ways including source tests, theoretical calculations, or a combination of both tests and calculations. Extensive analyses of source tests or a single source test may be used to derive some of the factors in this compilation. Other factors are calculated by using material balances or national emissions estimates divided by national production capacities for chemicals. The "Notes" in Sections 3 and 4 provide a brief description of the basis of each factor, such as whether it is derived from source tests, engineering judgment, or other methods. References are also given so that the user can obtain more information about a specific factor.

The data depth of the factors contained in this report is also highly variable. For some processes, emission factors are available for individual release points or unit operations within processes. In other cases, factors are only available for an entire process or emission source. This is illustrated in Section 3 for carbon tetrachloride. Carbon tetrachloride is emitted when it is produced as a product, by-product, or intermediate during various processes and when it is used to formulate other compounds. Emission factors for carbon tetrachloride releases from perchloroethylene production are listed for neutralization, drying, distillation, and other operations; whereas only a single factor for the emissions of carbon tetrachloride from pharmaceutical production facilities is shown.

Emission factors are very useful tools for estimating emissions of toxic air pollutants. In many cases, these factors are simply averages of all available tools and do not generally consider the influence of various process design parameters such as temperature, age of equipment, reactant concentration, etc. If the emission factors were correlated to process design variables, they would provide more precise emission estimates than factors in this report. Because insufficient data exist to determine the accuracy or validity of the emission factors in this compilation, no estimates can be made of the error that results from using these factors to calculate toxic air emissions from any given facility.

The emission factors in this report are intended to be used for making preliminary estimates of toxic air emissions from various sources of air pollution. Emission factors are more appropriately used to estimate the collective emissions of a number of sources, such as in an emissions inventory for a selected geographic area. The emission factors in this compilation will not likely provide exact estimates of emissions from any particular facility. Because these factors are obtained from data of wide range and varying

degrees of accuracy, emissions calculated for a given facility using these factors are likely to differ from the actual emissions of the facility. In some cases, the differences in emissions estimated from emission factors and actual emissions could vary significantly. Only specific source measurement can determine the actual emissions of a pollutant under conditions at the time of a test. For the most accurate emissions estimates, source specific data should be obtained whenever possible. When source specific data are not available, emission factors can be used to estimate emissions. More accurate air toxics emission estimates can be made by using information contained in the primary references listed in Sections 3 and 4 in addition to the emission factors.

Emission factors are one method used to estimate emission of air toxics from sources. Inputs needed to calculate emissions using emission factors include:

1. Activity information about sources (amount of product produced, fuel used, etc.),

2. Emission factors to translate activity information into "uncontrolled" emission estimates, and

3. Control device efficiency information to provide basis for estimation of emissions to the atmosphere after passage through a control device.

The basic emission estimation algorithm is:

$$E = R \times EF \times (1 - C/100)$$

where:

E = emission estimate for source
R = activity level
EF = emission factor
C = control device efficiency.

The accuracy of the emission estimate is equally dependent upon the relative accuracy of each of the components. Errors introduced by any one of these components affect the final emission estimate.

To illustrate the application of emission factors, an example is provided for acrylonitrile. If an agency decides to estimate air releases of acrylonitrile in an area, it could make preliminary estimates of emissions by using emission factors in Section 3 and data on material usage records, permit applications, or inspector records of facilities producing or using acrylonitrile. However, it must be emphasized that these estimates can vary greatly from actual emissions because the factors are based on releases from hypothetical plants with hypothetical emission controls. To develop a more accurate emission estimate, the primary reference listed in Section 3, **Locating and Estimating Air Emissions From**

Sources Of Acrylonitrile, should be reviewed. A comparison of the process parameters of the hypothetical plant contained in the primary references and of those of the actual facility allows the agency to determine the sources of error associated with using the emission factors and to produce more realistic emission estimates. If source specific data are not available, then the agency should view the calculated emissions of acrylonitrile as only a preliminary estimate.

SECTION 3. EMISSION FACTORS FOR TOXIC AIR POLLUTANTS

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Acenaphthene	83329		Scrap tire, open burning	Tires in experimental burn hut		3.449 lb/ton	Sum of PAH analy on lig extrat. of XAD-2 test & filter compont. shred condition = 4" by 2" piece, burn rate=1.3 kg/hr, uncontrolled	212
Acenaphthene	83329		Scrap tire, open burning	Tires in experimental burn hut		6.334 lb/ton	Sum of PAH analy on lig extrat. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.1 kg/hr, uncontrolled	212
Acenaphthene	83329		Scrap tire, open burning	Tires in experimental burn hut		0.629 lb/ton	Sum of PAH analy on lig extrat. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.7 kg/hr, uncontrolled	212
Acenaphthene	83329		Scrap tire, open burning	Tires in experimental burn hut		0.531 lb/ton	Sum of PAH analy on lig extrat. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=2.3 kg/hr, uncontrolled	212
Acenaphthene	83329	25	Wood combustion, industrial	Balanced draft wicket stoker-fired industrial boiler	10200906	2.2 x 10E-6 lb/ton	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.54 kg/s, boil. eff. 61.3%	177
Acenaphthene	83329	25	Wood combustion, industrial	Balanced draft wicket stoker-fired industrial boiler	10200906	2.2 x 10E-5 lb/ton	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 kg/s, boil. eff. 55.3%	177
Acenaphthene	83329	25	Wood combustion, industrial	Balanced draft wicket stoker-fired industrial boiler	10200906	1.1 x 10E-4 lb/ton	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.54 kg/s, boil. eff. 61.3%	177
Acenaphthylene	208968		Scrap tire, open burning	Tires in experimental burn hut		0.747 lb/ton	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.3 kg/hr, uncontrolled	212
Acenaphthylene	208968		Scrap tire, open burning	Tires in experimental burn hut		0.804 lb/ton	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr, uncontrolled	212
Acenaphthylene	208968		Scrap tire, open burning	Tires in experimental burn hut		1.851 lb/ton	XAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 1.7 kg/hr, uncontrolled	212
Acenaphthylene	208968		Scrap tire, open burning	Tires in experimental burn hut		0.691 lb/ton	XAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 2.3 kg/hr, uncontrolled	212
Acenaphthylene	208968		Scrap tire, open burning	Tires in experimental burn hut		1.274 lb/ton	Sum of PAH analy on lig extrat. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.3 kg/hr, controlled	212
Acenaphthylene	208968		Scrap tire, open burning	Tires in experimental burn hut		0.972 lb/ton	Sum of PAH analy on lig extrat. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.1 kg/hr, controlled	212
Acenaphthylene	208968		Scrap tire, open burning	Tires in experimental burn hut		2.304 lb/ton	Sum of PAH analy on lig extrat. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.7 kg/hr, controlled	212

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Acenaphthylene	208968		Scrap tire, open burning	Tires in experimental burn hut		1.140 lb/ton	Sum of PAH analy on liq extrat. of XAD-2 teat & filter compont. shred condition = 2" by 2" piece, burn rate=2.3 kg/hr, controlled	212
Acenaphthylene	208968	25	Wood combustion, industrial	Horizontal return tube	10200906	4.8 x 10E-6 lb/ton	Results of GC/MS analysis of xad-2 resin extract	176
Acetaldehyde	75070		Open burning	Area source	50300201	0.72 - 1.46 lb/ton wood burned	Estimated from a total aldehyde value of 10.4 lb/ton	130
Acetaldehyde	75070		Wood combustion, residential	Fireplace		0.21 lb/ton wood burned	Burning Jack Pine	130
Acetaldehyde	75070		Wood combustion, residential	Fireplace		0.4 lb/ton wood burned	Burning cedar	130
Acetaldehyde	75070		Wood combustion, residential	Fireplace		0.16 lb/ton wood burned	Burning red oak	130
Acetaldehyde	75070		Wood combustion, residential	Fireplace		0.172 lb/ton wood burned	Burning green pine	130
Acetaldehyde	75070		Wood combustion, residential	Fireplace		1.4 lb/ton wood	Uncontrolled, average emission factor based on source tests	58
Acetaldehyde	75070		Wood combustion, residential	Fireplace		1.4 lb/ton burned	Uncontrolled	94
Acetaldehyde	75070		Wood combustion, residential	Non-baffled stove		0.2 - 0.4 lb/ton wood burned	Burning green oak or green pine	130
Acetaldehyde	75070		Wood combustion, residential	Small airtight woodstoves, birch wood		0.0228 lb/ton dry fuel burned	Normal high-temperature burning conditions, based on emission tests	57
Acetaldehyde	75070		Wood combustion, residential	Small airtight woodstoves, birch wood		1.984 lb/ton dry fuel burned	Starved air conditions, based on emission tests	57
Acetaldehyde	75070		Wood combustion, residential	Small airtight woodstoves, spruce wood		0.0344 lb/ton dry fuel burned	Normal high-temperature burning conditions, based on emission tests	57
Acetaldehyde	75070		Wood combustion, residential	Small airtight woodstoves, spruce wood		0.63 lb/ton dry fuel burned	Starved air conditions, based on emission tests	57
Acetaldehyde	75070		Wood combustion, residential	Woodstove		0.22 lb/ton wood	Uncontrolled, average emission factor based on source tests	58
Acetaldehyde	75070		Wood combustion, residential	Woodstove		0.24 lb/ton burned	Uncontrolled	94
Acetaldehyde	75070	2095	Coffee bean roasting	Continuous bean roaster	30200201	0.046 lb/ton beans roasted	Uncontrolled, average of 3 tests	130

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Acetaldehyde	75070	2095	Coffee bean roasting	Continuous bean roaster	30200201	0.0164 lb/ton beans roasted	Controlled with afterburner, average of 2 tests	130
Acetaldehyde	75070	2865	Acetone/phenol manufacture from cumene	Cumene peroxidation vent	30120202	0.0042 lb/ton phenol	Controlled (not specified), based on sampling, 1977 data, average factors	125
Acetaldehyde	75070	2869	Acetaldehyde production	Off-air vent	30112013	8.6 lb/ton acetaldehyde	Controlled, high pressure scrubber, data from one plant	143
Acetaldehyde	75070	2869	Acrylic acid production - propylene oxidation	Quench absorber off-gas	30113222	0.2 lb/ton acrylic acid produced	Based on data from one plant	151
Acetaldehyde	75070	4953	Municipal waste combustion	Mass burn unit stack	50100102	8.6 x 10E-9 lb/ton waste burned	From test results, no data on controls	130
Acetaldehyde	75070	4953	Municipal waste combustion	Modular burn unit stack	50100101	4.4 x 10E-10 lb/ton waste burned	From test results, no data on controls	130
Acetaldehyde	75070	4953	Municipal waste combustion	Refuse derived fuel unit stack	50100121	3.0 x 10E-9 lb/ton waste burned	From test results, no data on controls	130
Acetic acid	64197	2861	Charcoal manufacture	Batch kiln	30100403	32 lb/ton charcoal	Controlled, afterburner, engineering judgement	124
Acetic acid	64197	2861	Charcoal manufacture	Continuous furnace	30100404	11 lb/ton charcoal	Controlled, afterburner, engineering judgement	124
Acetic acid	64197	2861	Charcoal manufacture	Overall process	30100401	218 lb/ton charcoal	Uncontrolled, range of 204-232 lb/ton, engineering judgement	124
Acetic acid	64197	2869	Acrylic acid production - propylene oxidation	Quench absorber off-gas	30113222	2.8 lb/ton acrylic acid produced	Based on data from one plant	151
Acetic acid	64197	2869	Terephthalic acid (crude) production	Reactor vent	30103102	1.2 lb/ton crude TPA produced	Uncontrolled	42
Acetone	67641	267	Paper coating	Coating line	40201301	2.0E x 10-4 lb/ft paper coated	Based on one sampling program, sampled at discharge of afterburner	11
Acetone	67641	2865	Acetone/phenol manufacture from cumene	Cleavage section vents (combined)	30120211	1.2 x 10E-5 lb/ton phenol	Controlled (unspecified), based on test data, 1977 data, average factors	125
Acetone	67641	2865	Acetone/phenol manufacture from cumene	Cumene peroxidation vent	30120202	1.2 lb/ton phenol	Controlled (not specified), based on sampling, 1977 data, average factors	125
Acetone	67641	2865	Acetone/phenol manufacture from cumene	Storage tank vents	407228	0.12 lb/ton phenol	Controlled (unspecified), based on test data, 1977 data, average factors	125
Acetone	67641	2869	Acrylic acid production - propylene oxidation	Quench absorber off-gas	30113222	2.4 lb/ton acrylic acid produced	Based on data from one plant	151
Acetone	67641	2869	Glycerin production - chlorination process	Lights stripper vent - allyl alcohol step	30117615	9.5 lb/ton glycerin produced	Uncontrolled, assumed 25% VOC is acetone, test data and calculations	150

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Acetone	67641	7699	Tank truck cleaning	Entire process	490004	0.686 lb/truck cleaned	Emission measurement	97
Acetonitrile	75058	2869	Acrylonitrile production - SOHIO process	Absorber vent	30125406	4.0 lb/ton acrylonitrile produced	Uncontrolled, based on data from plants and EPA studies	149
Acetonitrile	75058	4953	Sewage sludge incineration	Multiple hearth furnace	50100506	0.02142 lb/ton dry sludge	One test, scrubber	101
Acetonitrile	75058	4953	Sewage sludge incineration	Multiple hearth furnace	50100506	0.00158 lb/ton dry sludge	One test, scrubber and afterburner, better operating conditions	101
Acetophenone	98862	2865	Acetone/phenol manufacture from cumene	Cleavage section vents (combined)	30120211	8.8 x 10E-6 lb/ton phenol	Controlled (unspecified), based on test data, 1977 data, average factors	125
Acetophenone	98862	2865	Acetone/phenol manufacture from cumene	Cumene peroxidation vent	30120202	0.0172 lb/ton phenol	Controlled (not specified), based on sampling, 1977 data, average factors	125
Acetylene	74862	2895	Carbon black manufacture - oil furnace	Main process purge vent	30100504	90 lb/ton carbon black produced	Range of 10-120 lb/ton based on survey of operating plants	97
Acrolein	107028		Wood combustion, residential	Fireplace/woodstove		0.08 lb/ton wood burned		140
Acrolein	107028	2095	Coffee bean roasting	Continuous roasting	30200201	0.076 lb/ton beans roasted	Uncontrolled	140
Acrolein	107028	2095	Coffee bean roasting	Continuous roasting	30200201	0.032 lb/ton beans roasted	Afterburner	140
Acrolein	107028	2869	Acrolein production	Acrolein process scrubber overheads	3011203	0.04 lb/ton acrolein produced	Incinerator, based on 8.38 x 10E7 lb/yr capacity plant	140
Acrolein	107028	2869	Acrolein production	Process fugitive emissions	30112037	1.9 lb/ton acrolein produced	Leak detection and repair, based on 8.38 x 10E7 lb/yr capacity plant	140
Acrolein	107028	2869	Acrylic acid production	Process fugitive emissions	30113227	8 lb/ton acrylic acid produced	Uncontrolled, plant of 1.5 x 10E8 lb capacity, see reference for more data	140
Acrolein	107028	2869	Acrylic acid production - propylene oxidation	Quench absorber off-gas	30113222	9.0 lb/ton acrylic acid produced	Based on data from one plant	151
Acrolein	107028	2869	Methylthiohydroxybutanoic acid production	Acrolein vent collection header		<0.04 lb/ton MHBA produced	Incinerator with scrubber	140
Acrolein	107028	4953	Municipal waste combustion	Mass burn unit	50100101	6.8 x 10E-9 lb/ton waste	Control not described	140
Acrolein	107028	4953	Municipal waste combustion	Modular burn unit	50100101	1.1 x 10E-10 lb/ton	Control not described	140
Acrolein	107028	4953	Municipal waste combustion	Refuse derived fuel incinerator	50100101	3.2 x 10E-10 lb/ton waste	Control not described	140

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Acrolein	107028	4953	Wastewater treatment	POTW	50100701	180 lb/ton of acrolein in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	89
Acrylic acid	79107	2869	Acrylic acid production - propylene oxidation	Quench absorber off-gas	30113222	36.0 lb/ton acrylic acid produced	Based on data from one plant	151
Acrylonitrile	107131	2869	Acrylonitrile production	Absorber vent	30125406	0.20 lb/ton acrylonitrile produced	Uncontrolled	162
Acrylonitrile	107131	2869	Acrylonitrile production	Absorber vent	30125406	0.004 lb/ton acrylonitrile produced	Thermal incinerator	162
Acrylonitrile	107131	2869	Acrylonitrile production	Absorber vent (start up)	30125407	0.374 lb/ton acrylonitrile produced	No control, emissions vented to avoid explosion, factor is average for 1 year	162
Acrylonitrile	107131	2869	Acrylonitrile production	Acrylonitrile run tank vents	407076	0.256 lb/ton acrylonitrile produced	Uncontrolled, assumed fixed roof	162
Acrylonitrile	107131	2869	Acrylonitrile production	Acrylonitrile run tank vents	407076	0.00256 lb/ton acrylonitrile produced	Water scrubber	162
Acrylonitrile	107131	2869	Acrylonitrile production	Acrylonitrile storage vents	407076	1.042 lb/ton acrylonitrile produced	Uncontrolled, assumed fixed roof	162
Acrylonitrile	107131	2869	Acrylonitrile production	Acrylonitrile storage vents	407076	0.01042 lb/ton acrylonitrile produced	Water scrubber	162
Acrylonitrile	107131	2869	Acrylonitrile production	Barge loading	30125409	0.3 lb/ton acrylonitrile produced	Uncontrolled	162
Acrylonitrile	107131	2869	Acrylonitrile production	Barge loading	30125409	0.003 lb/ton acrylonitrile produced	Water scrubber	162
Acrylonitrile	107131	2869	Acrylonitrile production	Column vents	30125408	10 lb/ton acrylonitrile produced	Uncontrolled	162
Acrylonitrile	107131	2869	Acrylonitrile production	Column vents	30125408	0.20 lb/ton acrylonitrile produced	Flare	162
Acrylonitrile	107131	2869	Acrylonitrile production	Crude acrylonitrile storage vents	407076	0.096 lb/ton acrylonitrile produced	Uncontrolled, assumed fixed roof	162
Acrylonitrile	107131	2869	Acrylonitrile production	Crude acrylonitrile storage vents	407076	0.00096 lb/ton acrylonitrile produced	Water scrubber	162
Acrylonitrile	107131	2869	Acrylonitrile production	Fugitive emissions	30125409	1.612 lb/ton acrylonitrile produced	Uncontrolled	162
Acrylonitrile	107131	2869	Acrylonitrile production	Fugitive emissions	30125409	0.476 lb/ton acrylonitrile produced	Leak detection and repair	162

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Acrylonitrile	107131	2869	Acrylonitrile production	Tank car loading venting	301284	0.334 lb/ton acrylonitrile produced	Uncontrolled	142
Acrylonitrile	107131	2869	Acrylonitrile production	Tank car loading venting	30125409	0.0034 lb/ton acrylonitrile produced	Water scrubber	142
Acrylonitrile	107131	2869	Acrylonitrile production - SOHIO process	Absorber vent	30125406	0.2 lb/ton acrylonitrile produced	Uncontrolled, based on data from plants and EPA studies	149
Acrylonitrile	107131	4953	Land treatment	Petroleum refinery sludge	50300823	0.185 lb/hectare-hr	Based on two different sampling methods at the same site	13
Acrylonitrile	107131	4953	Sewage sludge incineration	Fluidized-bed furnace	50100504	<6 x 10E-5 lb/ton dry sludge	One test, scrubber	101
Acrylonitrile	107131	4953	Sewage sludge incineration	Multiple hearth furnace	50100504	0.0326 lb/ton dry sludge	Average of four tests, scrubber	101
Acrylonitrile	107131	4953	Wastewater treatment	POTW	50100701	240 lb/ton acrylonitrile in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	60
Adipic acid	124049	2869	Adipic acid production	Adipic acid drying, cooling, storage	30100106	0.8 lb/ton produced	Baghouse	97
Adipic acid	124049	2869	Adipic acid production	Adipic acid refining	30100105	0.1 lb/ton produced	Uncontrolled	97
Aldehydes		2911	Petroleum refinery	Fluidized bed catalytic cracker unit regenerator	30600301	0.054 kg/m^3 of fresh fuel throughput	Uncontrolled emissions	185
Aldrin	309002	4953	Sewage sludge incineration	Fluidized-bed furnace	50100504	<7.6 x 10E-5 lb/ton dry sludge	One test, scrubber	101
Aldrin	309002	4953	Sewage sludge incineration	Multiple hearth furnace	50100504	<4.6 x 10E-5 lb/ton dry sludge	One test, scrubber	101
Allyl chloride	107051	2869	Epichlorohydrin production by hydrochlorination	Absorption	301305	4 lb/ton produced	Control unclear, based on mass balance and testing	95
Allyl chloride	107051	2869	Epichlorohydrin production by hydrochlorination	Separation unit	301305	4 lb/ton produced	Control unclear, based on mass balance and testing	95
Aluminum	7429905		Wood combustion, residential	Woodstove without baffle		0.003 lb/ton wood	Uncontrolled, based on one study, nonbaffled stove burning green pine	58
Aluminum	7429905	226	Woven fabric finishing	Curing oven - resin finish	330001	3.6 x 10E-5 lb/ton fabric	Uncontrolled, one test	52
Aluminum	7429905	226	Woven fabric finishing	Heat setting	330001	4 x 10E-5 lb/ton fabric	Uncontrolled, based on test data	52

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Aluminum	7429905	226	Woven fabric finishing	Tenter frames - resin finishing	330001	0.0026 lb/ton fabric	Uncontrolled, average of four tests	82
Aluminum	7429905	226	Woven fabric finishing	Thermosol dyeing	330001	2.2 x 10E-4 lb/ton fabric	Uncontrolled, average of three tests	82
Aluminum	7429905	2951	Asphaltic concrete production	Plant stack	305002	1.2 x 10E-7 - 2.47 x 10E-7 lb/ton concrete	Uncontrolled from a single plant	170
Aluminum	7429905	2951	Asphaltic concrete production	Plant stack	305002	1.74 x 10E-9 - 5.1 x 10E-9 lb/ton concrete	Controlled (unspecified) from a single plant	170
Aluminum	7429905	4953	Municipal waste combustion	Incinerator stack	501001	0.14 lb/ton munic. solid waste-dry wt.	Controlled by spray-baffle scrubber, based on material balance for model incinerator	98
Ammonia	7664417		Coal combustion			0.00056 lb/ton coal burned	Sources emitting > 100 tons NH3/year	179
Ammonia	7664417		Fertilizer application	Anhydrous ammonia fertilizer	302999	19 lbs/ton fertilizer	Sources emitting > 100 tons NH3/year	179
Ammonia	7664417		Natural gas combustion	Commercial boiler	10300401	0.49 lb/10E6 cubic feet gas burned	Sources emitting > 100 tons NH3/year	179
Ammonia	7664417		Natural gas combustion	Industrial boilers	10200401	3.2 lbs/10E6 cubic feet gas burned	Sources emitting > 100 tons NH3/year	179
Ammonia	7664417		Oil combustion	Fuel oil		0.8 lb/1000 gallons fuel oil burned	Sources emitting > 100 tons NH3/year	179
Ammonia	7664417	0211	Beef cattle feed lots	Entire source	30202001	0.011 lb/day/1000 head capacity	Engineering Judgement	97
Ammonia	7664417	12	Coal refuse pile burning	Refuse pile	90300204	8.6 x 10E-5 lb/hr/ton burning coal refus		136
Ammonia	7664417	211	Beef cattle feed lots	Animals & waste	3020201	13 lbs / animal	Sources emitting > 100 tons NH3/year	179
Ammonia	7664417	212	Fertilizer application	Beef cattle manure	3020202	1.8 lbs / animal	Sources emitting > 100 tons NH3/year	179
Ammonia	7664417	213	Fertilizer application	Swine manure	30203801	3.1 lbs / animal	Sources emitting > 100 tons NH3/year	179
Ammonia	7664417	214	Fertilizer application	Sheep manure	30203801	2.0 lbs / animal	Sources emitting > 100 tons NH3/year	179
Ammonia	7664417	241	Fertilizer application	Dairy cow manure	302030	26 lbs / animal	Sources emitting > 100 tons NH3/year	179
Ammonia	7664417	251	Fertilizer application	Chicken (broilers) manure	30202101	0.024 lb / animal	Sources emitting > 100 tons NH3/year	179
Ammonia	7664417	253	Fertilizer application	Turkey manure	30202101	0.16 lb / animal	Sources emitting > 100 tons NH3/year	179
Ammonia	7664417	259	Fertilizer application	Laying hen manure	30202101	0.19 lb / animal	Sources emitting > 100 tons NH3/year	179

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Ammonia	7664417	287	Ammonia synthesis	Condensate steam stripper	30100309	2.2 lbs/ton product	Sources emitting > 100 tons NH3/year, uncontrolled	97, 179
Ammonia	7664417	287	Ammonia synthesis	Carbon dioxide regenerator	30100308	2.0 lbs/ton product	Sources emitting > 100 tons NH3/year, uncontrolled	97, 179
Ammonia	7664417	287	Urea production	Rotary drum granulator coolers	30104012	0.0051 lbs/ton coal charged	Sources emitting > 100 tons NH3/year	179
Ammonia	7664417	287	Urea production	Drum granulation	30104004	2.2 lbs/ton product	Sources emitting > 100 tons NH3/year	179
Ammonia	7664417	287	Urea production	Fluidized bed drilling feed grade	30104011	4.1 lbs/ton product	Sources emitting > 100 tons NH3/year	179
Ammonia	7664417	287	Urea production	Fluidized bed drilling agric. grade	30104010	2.9 lbs/ton product	Sources emitting > 100 tons NH3/year	179
Ammonia	7664417	287	Urea production	Nonfluidized bed drilling agric. grade	30104008	0.87 lbs/ton product	Sources emitting > 100 tons NH3/year	179
Ammonia	7664417	287	Urea production	Solution formation / concentration	30104002	18.2 lbs/ton product	Sources emitting > 100 tons NH3/year	179
Ammonia	7664417	2873	Ammonium nitrate production	Evaporation/condensation operations	30102717	0.54 - 33.4 lb/ton NH4 NO3 produced	Uncontrolled, presented as range because of data variations	97
Ammonia	7664417	2873	Ammonium nitrate production	High density prill coolers	30102714	0.04 lb/ton NH4 NO3 produced	Uncontrolled, represents coolers and pre-coolers	97
Ammonia	7664417	2873	Ammonium nitrate production	Low density prill coolers	30102724	0.30 lb/ton NH4 NO3 produced	Uncontrolled, represents coolers and pre-coolers, sources emitting >100 tons NH3/year	97, 179
Ammonia	7664417	2873	Ammonium nitrate production	Low density prill dryers	30102725	0 - 3.18 lb/ton NH4 NO3 produced	Uncontrolled, presented as range due to data variations, represents dryer and pre-dryer	97
Ammonia	7664417	2873	Ammonium nitrate production	Neutralizer	30102704	0.86 - 34.0 lb/ton NH4 NO3 produced	Uncontrolled, presented as range because of data variations	97
Ammonia	7664417	2873	Ammonium nitrate production	Pan granulator coolers	30102730	0 lb/ton NH4 NO3 produced	Represents cooler and pre-cooler	97
Ammonia	7664417	2873	Ammonium nitrate production	Rotary drum granulator coolers	30102729	1.18 lb/ton NH4 NO3 produced	Uncontrolled, represents cooler and pre-cooler	97
Ammonia	7664417	2873	Ammonium nitrate production	Solids formation - low density prill towers	30102722	0.26 lb/ton NH4 NO3 produced	Uncontrolled, sources emitting >100 tons NH3/year	97, 179
Ammonia	7664417	2873	Ammonium nitrate production	Solids formation - pan granulators	30102708	0.14 lb/ton NH4 NO3 produced	Uncontrolled	97
Ammonia	7664417	2873	Ammonium nitrate production	Solids formation - rotary drum granulators	30102707	59.4 lb/ton NH4 NO3 produced	Uncontrolled	97

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Ammonia	7664417	2873	Ammonium nitrate production	Solids formations - high density prill towers	30102712	97.2 lb/ton NH4 NO3 produced	Uncontrolled, sources emitting >100 tons NH3/year	97, 179
Ammonia	7664417	2873	Ammonium nitrate production	Granulator cooler	30102704	1 lb/ton product	Sources emitting > 100 tons NH3/year	179
Ammonia	7664417	2873	Ammonium nitrate production	Low density prill dryers	30102725	1.6 lbs/ton product	Sources emitting > 100 tons NH3/year	179
Ammonia	7664417	2873	Ammonium nitrate production	Granulation	30102705	50 lbs/ton product	Sources emitting > 100 tons NH3/year	179
Ammonia	7664417	2873	Ammonium nitrate production	Evaporation/condensation operations	30102717	17 lbs/ton product	Sources emitting > 100 tons NH3/year	179
Ammonia	7664417	2873	Ammonium nitrate production	Neutralizer	30102704	18 lbs/ton product	Sources emitting > 100 tons NH3/year	179
Ammonia	7664417	2873	Urea production	Evaporator	301040	3.46 lb/ton urea produced	Controlled by wet scrubber, test data for one plant	137
Ammonia	7664417	2873	Urea production	Granulation	30104004	0.8 lb/ton urea produced	Controlled by scrubber, test data	137
Ammonia	7664417	2873	Urea production	Prill tower	30104003	0.80 lb/ton urea produced	Uncontrolled, data from three plants	137
Ammonia	7664417	2874	Ammonium phosphate production	Total plant emissions	301030	0.14 lb/ton phosphate produced	Controlled (not specified), sources emitting >100 tons NH3/year	97, 179
Ammonia	7664417	2911	Petroleum refinery	Fluidized catalytic cracking unit	30600201	1.29 lb/10E3 gal fresh feed	Uncontrolled	97, 185
Ammonia	7664417	2911	Petroleum refinery	Fluidized catalytic cracking unit	30600201	Negligible	Controlled by electrostatic precipitator and CO boiler	97
Ammonia	7664417	2911	Petroleum refinery	Reciprocating compressor engines	20200202	0.2 lbs/1000 cubic feet gas burned	Sources emitting > 100 tons NH3/year	97, 179
Ammonia	7664417	2911	Petroleum refinery with cracking/reforming	Tcc units (thermal catalytic cracker)		6 lbs/1000 bbl feed	Sources emitting > 100 tons NH3/year, emission factor rating B	179
Ammonia	7664417	2911	Petroleum refinery with cracking/reforming	Fcc units (fluid catalytic cracker)	30600201	94 lbs/1000 bbl feed	Sources emitting > 100 tons NH3/year, emission factor rating B	179
Ammonia	7664417	3312	Coke production, by-product recovery process	Coke pushing	30300303	0.1 lb/ton coal charged	Uncontrolled, sources emitting >100 tons NH3/year	97, 179
Ammonia	7664417	3312	Coke production, by-product recovery process	Door leaks	30300308	0.06 lb/ton coal charged	Uncontrolled, sources emitting >100 tons NH3/year	97, 179
Ammonia	7664417	3312	Coke production, by-product recovery process	Wet coal charging larry car	30300302	0.02 lb/ton coal charged	Uncontrolled, sources emitting >100 tons NH3/year	97, 179

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Ammonia	7664417	332	Coke production	Quenching (contaminated water)	303003	0.28 lbs/ton coal charged	Sources emitting > 100 tons NH3/year, emission factor rating D	179
Ammonia	7664417	41	Internal combustion engines - mobile	Diesel fuel	28888801	0.95 lb/1000 gal. fuel burned	Sources emitting > 100 tons NH3/year, emission factor rating E	179
Ammonia	7664417	41	Internal combustion engines - mobile	Leaded gasline	28888801	0.42 lb/1000 gal. fuel burned	Sources emitting > 100 tons NH3/year, emission factor rating D	179
Ammonia	7664417	41	Internal combustion engines - mobile	Unleaded fuel	28888801	0.63 lb/1000 gal. fuel burned	Sources emitting > 100 tons NH2/year, emission factor rating D	179
Ammonia	7664417	49	Natural gas combustion	Utility boiler	10100601	3.2 lbs/10E6 cubic feet gas burned	Sources emitting > 100 tons NH3/year, emission factor rating C	179
Ammonium sulfate (2:1)	7783202	28	Ammonium sulfate production	Dryer	301	0.32 lb/ton ammonium sulfate produced	Wet scrubber, based on test data from all types of AG dryers	129
Ammonium sulfate (2:1)	7783202	2869	Ammonium sulfate production - caprolactam by-product	Fluidized-bed dryer	30121009	220 lb/ton ammonium sulfate produced	Uncontrolled, based on source test	129
Ammonium sulfate (2:1)	7783202	2869	Ammonium sulfate production - caprolactam by-product	Rotary dryer	30121009	52 lb/ton ammonium sulfate produced	Uncontrolled, range of 0.8-154 lb/ton, based on test data	129
Ammonium sulfate (2:1)	7783202	2873	Ammonium sulfate production - synthetic process	Rotary dryer	30113004	52 lb/ton ammonium sulfate produced	Uncontrolled, range of 0.8-154 lb/ton, based on test data	129
Ammonium sulfate (2:1)	7783202	3312	Ammonium sulfate production - coke oven by-product	Rotary dryer	303003	20 lb/ton ammonium sulfate produced	Uncontrolled	129
Aniline	62533	4953	Wastewater treatment	POTW	50100701	1200 lb/ton of aniline in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
Anthracene	120127		Scrap tire, open burning	Tires in experimental burn hut		1.006 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.3 kg/hr, controlled	212
Anthracene	120127		Scrap tire, open burning	Tires in experimental burn hut		0.0976 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.1 kg/hr, controlled	212
Anthracene	120127		Scrap tire, open burning	Tires in experimental burn hut		0.1526 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.7 kg/hr, controlled	212
Anthracene	120127		Scrap tire, open burning	Tires in experimental burn hut		0.0724 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=2.3 kg/hr, controlled	212

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POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Anthracene	120127	2491	Wood preserving	Creosote conditioning	30700501	0.0009 lbs/hr	Based on one sampling program at one facility	10
Anthracene	120127	2491	Wood preserving	Creosote cool-down	307005	0.0012 lbs/hr	Based on one sampling program at one facility	10
Anthracene	120127	2491	Wood preserving	Pentachlorophenol conditioning	30700597	0.0011 lbs/hr	Based on one sampling program at one facility	10
Anthracene	120127	2491	Wood preserving	Pentachlorophenol cool-down	30700597	0.0009 lbs/hr	Based on one sampling program at one facility	10
Anthracene	120127	2491	Wood preserving	Pentachlorophenol treating - fugitive	30700597	0.012 lbs/hr	Based on one sampling program at one facility	10
Anthracene	120127	25	Wood combustion, industrial	Balanced draft wigbas stoker-fired industrial boiler	10200906	4.4 x 10E-6 lbs/ton fuel	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.84 kg/s, boil. eff. 61.3%	177
Anthraquinone	84651	226	Woven fabric finishing	Curing oven - resin finish	330001	0.013 lb/ton fabric	Uncontrolled, average of two tests	92
Anthraquinone	84651	226	Woven fabric finishing	Tenter frames - resin finish	330001	0.0062 lb/ton fabric	Uncontrolled, average of two tests	92
Anthraquinone	84651	226	Woven fabric finishing	Thermosol dyeing	330001	0.0192 lb/ton fabric	Uncontrolled, average of two tests	92
Antimony	7440360		Wood combustion, residential	Woodstove without baffle		4.6 x 10E-5 lb/ton wood	Uncontrolled, based on one study, nonbaffled stove burning green pine	98
Antimony	7440360	226	Woven fabric finishing	Curing oven - resin finish	330001	1.76 x 10E-4 lb/ton fabric	Uncontrolled, one test	92
Antimony	7440360	226	Woven fabric finishing	Heat setting	330001	1.14 x 10E-4 lb/ton fabric	Uncontrolled, based on test data	92
Antimony	7440360	226	Woven fabric finishing	Tenter frames - resin finishing	330001	0.00126 lb/ton fabric	Uncontrolled, average of two tests	92
Antimony	7440360	226	Woven fabric finishing	Thermosol dyeing	330001	1.24 x 10E-4 lb/ton fabric	Uncontrolled, average of two tests	92
Antimony	7440360	3313	Ferroalloy production	Electric arc furnace, sealed, silicomanganese	30300702	2.8 x 10E-7 lb/mw-hr energy consumed by furnace	Controlled, venturi scrubber	169
Antimony	7440360	3313	Ferroalloy production	Electric arc furnace, open, ferromanganese	30700701	1.04 x 10E-3 lb/mw-hr energy consumed by furnace	Uncontrolled	169
Antimony	7440360	3313	Ferroalloy production	Electric arc furnace, semi-sealed, ferrosilicon	30300702	5.48 x 10E-3 lb/mw-hr energy consumed by furnace	Uncontrolled	169

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Arsenic	7440382		Coal combustion	Anthracite coal-fired cyclone boilers, util/commerc/industr	1	45-121 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Arsenic	7440382		Coal combustion	Anthracite coal-fired cyclone boilers, util/commerc/industr	1	22-59 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Arsenic	7440382		Coal combustion	Anthracite coal-fired cyclone boilers, util/commerc/industr	1	9.4 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Arsenic	7440382		Coal combustion	Anthracite coal-fired overfeed stoker boilers, util/commerc/industr	1	210-401 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Arsenic	7440382		Coal combustion	Anthracite coal-fired overfeed stoker boilers, util/commerc/industr	1	103-196 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Arsenic	7440382		Coal combustion	Anthracite coal-fired overfeed stoker boilers, util/commerc/industr	1	26-50 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Arsenic	7440382		Coal combustion	Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	244 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Arsenic	7440382		Coal combustion	Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	120 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Arsenic	7440382		Coal combustion	Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	15.6 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Arsenic	7440382		Coal combustion	Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	4.7 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Arsenic	7440382		Coal combustion	Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	521 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Arsenic	7440382		Coal combustion	Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	256 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36, 1
Arsenic	7440382		Coal combustion	Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	65 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Arsenic	7440382		Coal combustion	Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	29.8 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	34
Arsenic	7440382		Coal combustion	Anthracite coal-fired spreader stoker boilers, util/commerc/industr	1	103-210 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Arsenic	7440382		Coal combustion	Anthracite coal-fired spreader stoker boilers, util/commerc/industr	1	90-103 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Arsenic	7440382		Coal combustion	Anthracite coal-fired spreader stoker boilers, util/commerc/industr	1	13-24 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Arsenic	7440382		Coal combustion	Bituminous boiler	1	2.38 lb/ton flyash	1.36 - 3.4 lb/ton of flyash	3
Arsenic	7440382		Coal combustion	Bituminous coal-fired cyclone boiler, util/commerc/industr	1	115-310 lb/10E12 Btu	Uncontrolled, based on measured and calculated emission factors	34
Arsenic	7440382		Coal combustion	Bituminous coal-fired cyclone boiler, util/commerc/industr	1	94-152 lb/10E12 Btu	Multiclone, calculated based on engineering judgement	34
Arsenic	7440382		Coal combustion	Bituminous coal-fired cyclone boiler, util/commerc/industr	1	14.4 lb/10E12 Btu	ESP, based on source tests	34
Arsenic	7440382		Coal combustion	Bituminous coal-fired overfeed stoker boiler, util/commerc/industr	1	542-1030 lb/10E12 Btu	Uncontrolled, based on source tests	34
Arsenic	7440382		Coal combustion	Bituminous coal-fired overfeed stoker boiler, util/commerc/industr	1	245-905 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Arsenic	7440382		Coal combustion	Bituminous coal-fired overfeed stoker boiler, util/commerc/industr	1	67-129 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Arsenic	7440382		Coal combustion	Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	484 lb/10E12 Btu	Uncontrolled, based on emission test data	34
Arsenic	7440382		Coal combustion	Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	335 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Arsenic	7440382		Coal combustion	Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	40.1 lb/10E12 Btu	Controlled with ESP, based on source tests	34

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Arsenic	7440382		Coal combustion	Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	17.2 lb/10E12 Btu	Controlled with scrubber, based on source tests	34
Arsenic	7440382		Coal combustion	Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	1340 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Arsenic	7440382		Coal combustion	Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	498 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Arsenic	7440382		Coal combustion	Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	148 lb/10E12 Btu	Controlled with ESP, based on source tests	34
Arsenic	7440382		Coal combustion	Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	74.7 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	34
Arsenic	7440382		Coal combustion	Bituminous coal-fired spreader stoker boilers, util/commerc/industr	1	264-542 lb/10E12 Btu	Uncontrolled, based on source tests	34
Arsenic	7440382		Coal combustion	Bituminous coal-fired spreader stoker boilers, util/commerc/industr	1	129-265 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Arsenic	7440382		Coal combustion	Bituminous coal-fired spreader stoker boilers, util/commerc/industr	1	33-67 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Arsenic	7440382		Coal combustion	Lignite coal-fired cyclone boilers, util/commerc/industr	1	235-432 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Arsenic	7440382		Coal combustion	Lignite coal-fired cyclone boilers, util/commerc/industr	1	114-310 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Arsenic	7440382		Coal combustion	Lignite coal-fired cyclone boilers, util/commerc/industr	1	29 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Arsenic	7440382		Coal combustion	Lignite coal-fired overfeed stoker boiler, util/commerc/industr	1	1100-2100 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Arsenic	7440382		Coal combustion	Lignite coal-fired overfeed stoker boiler, util/commerc/industr	1	540-1030 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Arsenic	7440382		Coal combustion	Lignite coal-fired overfeed stoker boiler, util/comserc/industr	1	137-263 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Arsenic	7440382		Coal combustion	Lignite coal-fired pulverized dry bottom boiler, util/comserc/industr	1	1390 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Arsenic	7440382		Coal combustion	Lignite coal-fired pulverized dry bottom boiler, util/comserc/industr	1	483 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Arsenic	7440382		Coal combustion	Lignite coal-fired pulverized dry bottom boiler, util/comserc/industr	1	82 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Arsenic	7440382		Coal combustion	Lignite coal-fired pulverized dry bottom boiler, util/comserc/industr	1	39 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Arsenic	7440382		Coal combustion	Lignite coal-fired pulverized wet bottom boilers, util/comserc/industr	1	2730 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Arsenic	7440382		Coal combustion	Lignite coal-fired pulverized wet bottom boilers, util/comserc/industr	1	1340 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Arsenic	7440382		Coal combustion	Lignite coal-fired pulverized wet bottom boilers, util/comserc/industr	1	343 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Arsenic	7440382		Coal combustion	Lignite coal-fired pulverized wet bottom boilers, util/comserc/industr	1	156 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Arsenic	7440382		Coal combustion	Lignite coal-fired spreader stoker boilers, util/comserc/industr	1	530-1100 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Arsenic	7440382		Coal combustion	Lignite coal-fired spreader stoker boilers, util/comserc/industr	1	263-540 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Arsenic	7440382		Coal combustion	Lignite coal-fired spreader stoker boilers, util/commerc/industr	1	47-137 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Arsenic	7440382		Coal combustion, industrial	Pulverized stoker watertube boiler	10200202	0.0079 lbs/10E6 BTU heat input	Uncontrolled emissions	189
Arsenic	7440382		Coal combustion, industrial	Underfeed stoker watertube boiler	10200204	0.0079 lbs/10E6 BTU heat input	Uncontrolled emissions	189
Arsenic	7440382		Coal combustion, industrial	Chaingrate stoker watertube boiler	102002	0.0079 lbs/10E6 BTU heat input	Uncontrolled emissions	189
Arsenic	7440382		Coal combustion, industrial	Spreader stoker watertube boiler	10200204	0.0079 lbs/10E6 BTU heat input	Uncontrolled emissions	189
Arsenic	7440382		Coal combustion, residential	Anthracite coal-fired boilers		453 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	36
Arsenic	7440382		Coal combustion, residential	Bituminous coal-fired boilers		1140 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	36
Arsenic	7440382		Coal combustion, residential	Boilers fired by coal from appalachian region		1440 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Arsenic	7440382		Coal combustion, residential	Boilers fired by coal from interior region		1120 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Arsenic	7440382		Coal combustion, residential	Boilers fired by coal from northern plains region		525 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Arsenic	7440382		Coal combustion, residential	Boilers fired by coal from rocky mountain region		392 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Arsenic	7440382		Coal combustion, residential	Lignite coal-fired boilers		2380 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	36
Arsenic	7440382		Coal combustion, residential	Subbituminous coal-fired boilers		484 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	36
Arsenic	7440382		Cotton field spraying with arsenic acid	Airplane application		97.4 lb As acid/ton As applied	Estimated from literature data	7
Arsenic	7440382		Cotton field spraying with arsenic acid	Ground application		12.2 lb As acid/ton As applied	Range 1.8 to 32.4 lb arsenic acid/ton As acid applied	7
Arsenic	7440382		Oil combustion	Distillate oil-fired boiler, util/commerc/industr/residential	1	4.2 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Arsenic	7440382		Oil combustion	Distillate oil-fired boiler, util/comserc/industr/residential	1	2.04 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Arsenic	7440382		Oil combustion	Distillate oil-fired boiler, util/comserc/industr/residential	1	0.50 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Arsenic	7440382		Oil combustion	Distillate oil-fired boiler, util/comserc/industr/residential	1	0.42 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	34
Arsenic	7440382		Oil combustion	Residual oil-fired boiler, util/comserc/industr/residential	1	19 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Arsenic	7440382		Oil combustion	Residual oil-fired boiler, util/comserc/industr/residential	1	9.31 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Arsenic	7440382		Oil combustion	Residual oil-fired boiler, util/comserc/industr/residential	1	2.28 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Arsenic	7440382		Oil combustion	Residual oil-fired boiler, util/comserc/industr/residential	1	1.90 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	34
Arsenic	7440382		Sewage sludge incineration	Multiple hearth furnace	501	0.000 - 0.021 lbs/ton dry sludge	Controlled by wet scrubber, average of 5 tests was 0.0043 lbs/ton	203
Arsenic	7440382		Sewage sludge incineration	Fluidized-bed furnace	501	0.0007 lbs/ton dry sludge	Uncontrolled emissions, single test	203
Arsenic	7440382		Sewage sludge incineration	Multiple hearth furnace	501	0.0004 - 0.44 lbs/ton dry sludge	Uncontrolled emissions, average of 5 tests was 0.13 lbs/ton	203
Arsenic	7440382		Waste oil combustion	Waste oil-fired boilers (<150 million Btu/h) or space heaters	1	0.10 lb/1000 gal oil burned	Uncontrolled, based on emissions data and engineering judgement, variable	55
Arsenic	7440382		Wood combustion, residential	Woodstove without baffle		2.6 x 10E-4 lb/ton wood	Uncontrolled, based on one study, nonbaffled stove burning green pine	58

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Arsenic	7440382	0724	Cotton ginning	Entire process	30200410	0.0008-0.034 lb/ton cotton ginned	For stripper harvested cotton, control = cyclones & in-line filters	8
Arsenic	7440382	0724	Cotton ginning	Fugitive emissions	30200410	0.00141 lb total elem. As/bale lint	Rough estimate	32
Arsenic	7440382	0724	Cotton ginning	High pressure section	302004	0.00141 lb total elem. As/bale lint	Rough estimate, controlled with cyclone	32
Arsenic	7440382	0724	Cotton ginning	Low pressure section	30200404	9.7 x 10E-6 lb total elem. As/bale lint	Rough estimate, controlled with condenser drums or in-line filters	32
Arsenic	7440382	0724	Cotton ginning	Unloading fan cyclone	30200401	0.0006 lb/ton cotton ginned	For picker harvested cotton, control = cyclone	8
Arsenic	7440382	1011	Iron ore production		303	0.2 lb/ton of crude ore	Reported but unsubstantiated	3
Arsenic	7440382	32	Glass manufacturing	Entire process	305014	0.36 lb inorganic As/ton glass pulled	Rough estimate, control devices = only compliance with relevant State PM regs. assumed	32
Arsenic	7440382	32	Glass manufacturing	Entire process	305014	0.50 lb total elem. As/ton glass pulled	For all single, regener. type furnaces, no control, regardless of type of glass prod.	28
Arsenic	7440382	3312	Cast iron production		303008	0.014 lb/ton of metal charged		3
Arsenic	7440382	3313	Ferroalloy production	Electric arc furnace, open, ferromanganese	30300701	0.0264 lb/mw-hr energy consumed by furnace	Uncontrolled	149
Arsenic	7440382	3313	Ferroalloy production	Electric arc furnace, semi-sealed, ferrosilicon	30300702	0.0019 lb/mw-hr energy consumed by furnace	Uncontrolled	149
Arsenic	7440382	3313	Ferroalloy production	Electric arc furnace, sealed, silicomanganese	30300702	0.00013 lb/mw-hr energy consumed by furnace	Controlled, venturi scrubber	149
Arsenic	7440382	3331	Copper smelting-high arsenic ore	Fugitive emissions from flue dust handling	303005	0.001 x arsenic content of flue dust	Uncontrolled emissions, based on tests of one plant	204
Arsenic	7440382	3331	Copper smelting-high arsenic ore	Fugitive emissions from anode furnace	30300516	0.20 x arsenic content of blister copper	Uncontrolled emissions, based on tests of one plant	204
Arsenic	7440382	3331	Copper smelting-high arsenic ore	Fugitive emissions from calcine transfer	30300513	0.0003 x arsenic content of calcine	Uncontrolled emissions, based on tests of one plant	204
Arsenic	7440382	3331	Copper smelting-high arsenic ore	Fugitive emissions from matte tapping	30300514	0.025 x arsenic content of matte	Uncontrolled emissions, based on tests of one plant	204
Arsenic	7440382	3331	Copper smelting-high arsenic ore	Fugitive emissions from slag tapping	30300517	0.0012 x arsenic content of furnace slag	Uncontrolled emissions, based on tests of one plant	204
Arsenic	7440382	3331	Copper smelting-high arsenic ore	Fugitive emissions from converter slag return	30300518	0.0003 x arsenic content converter slag	Uncontrolled emissions, based on tests of one plant	204

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Arsenic	7440382	3331	Copper smelting-high arsenic ore	Fugitive emissions from converter operations	30300515	0.15 x arsenic cont. converter proc. offgas	Uncontrolled emissions, based on tests of one plant	204
Arsenic	7440382	3331	Copper smelting-high arsenic ore	Fugitive emissions from arsenic building	303005	0.005 x arsenic content of charge to arsenic plt	Uncontrolled emissions, based on tests of one plant	204
Arsenic	7440382	3331	Copper smelting-low arsenic ore	Fugitive emissions from flue dust handling	303005	0.001 x as cont. in the transferred dust	Represents uncontrolled fugitive emissions	204
Arsenic	7440382	3331	Copper smelting-low arsenic ore	Fugitive emissions from anode furnace	30300516	0.11 x arsenic cont. in anode furnace	Represents uncontrolled fugitive emissions	204
Arsenic	7440382	3331	Copper smelting-low arsenic ore	Fugitive emissions from converter operations	30300515	0.15 x arsenic cont. in proc. offgas	Represents uncontrolled fugitive emissions	204
Arsenic	7440382	3331	Copper smelting-low arsenic ore	Fugitive emissions from slag tapping	30300517	0.001 x arsenic content of furnace slag	Represents uncontrolled fugitive emissions	204
Arsenic	7440382	3331	Copper smelting-low arsenic ore	Fugitive emissions from matte tapping	30300514	0.015 x arsenic content of matte	Represents uncontrolled fugitive emissions	204
Arsenic	7440382	3331	Copper smelting-low arsenic ore	Fugitive emissions from calcine transfer	30300513	0.005 x arsenic content of calcine	Represents uncontrolled fugitive emissions	204
Arsenic	7440382	3331	Copper smelting-low arsenic ore	Fluid-bed roaster/converter (acid plant outlet)	303005	0.0073 - 0.023 lbs/ton feed	Acid plant functions as control system	204
Arsenic	7440382	3331	Copper smelting-low arsenic ore	Fluid-bed roaster	30300509	3 x 10E-4 - 6 x 10E-4 lbs/ton feed	Emissions controlled by ventri scrubber	204
Arsenic	7440382	3331	Copper smelting-low arsenic ore	Fluid-bed roaster	30300509	0.019 - 0.031 lbs/ton feed	Uncontrolled emissions, inlet to scrubber	204
Arsenic	7440382	3331	Copper smelting-low arsenic ore	Converter secondary hood outlet	30300515	0.035 - 0.174 lbs/ton feed	Uncontrolled emissions	204
Arsenic	7440382	3331	Copper smelting-low arsenic ore	Matte tapping hood outlet	30300514	0.0072 - 0.012 lbs/ton feed	Uncontrolled emissions	204
Arsenic	7440382	3331	Copper smelting-low arsenic ore	Acid plant outlet	303005	1 x 10E-4 - 2 x 10E-4 lbs/ton feed	Emissions controlled by ESP	204
Arsenic	7440382	3331	Copper smelting-low arsenic ore	Converter (acid plant inlet)	30300504	2 x 10E-4 - 7 x 10E-4 lbs/ton feed	Emissions controlled by ESP	204
Arsenic	7440382	3331	Copper smelting-low arsenic ore	Converter	30300504	2 x 10E-4 - 1.4 x 10E-3 lbs/ton feed	Uncontrolled emissions, inlet to ESP	204
Arsenic	7440382	3331	Copper smelting-low arsenic ore	Combined fluid-bed roaster/electric furnace/converter stream	30300524	0.041 - 0.081 lbs/ton feed	Emissions controlled by spray chamber/baghouse	204

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Arsenic	7440382	3331	Copper smelting-low arsenic ore	Combined fluid-bed roaster/electric furnace/converter stream	30300524	4.48 - 4.28 lbs/ton feed	Uncontrolled emissions	204
Arsenic	7440382	3331	Copper smelting-low arsenic ore	Matte tapping	30300514	0.0074 - 0.0087 lbs/ton feed	Emissions controlled by a baghouse	204
Arsenic	7440382	3331	Copper smelting-low arsenic ore	Roaster calcining fugitives	30300513	0.0044 - 0.016 lbs/ton feed	Controlled by a spray chamber/cold ESP	204
Arsenic	7440382	3331	Copper smelting-low arsenic ore	Converter building	30300504	7 x 10E-4 - 0.016 lbs/ton feed	Emissions controlled by a baghouse	204
Arsenic	7440382	3331	Copper smelting-low arsenic ore	Converter building	30300504	0.08 - 0.29 lbs/ton feed	Uncontrolled emissions, inlet to baghouse	204
Arsenic	7440382	3331	Copper smelting-low arsenic ore	Combined roaster/reverb furnace streams	30300503	0.08 - 0.26 lbs/ton feed	Process emissions controlled by an ESP	204
Arsenic	7440382	3331	Copper smelting-low arsenic ore	Combined roaster/reverb furnace streams	30300503	1.80 - 9.37 lbs/ton feed	Uncontrolled process emissions, inlet to ESP	204
Arsenic	7440382	3331	Copper smelting-low arsenic ore	Reverberatory furnace	30300503	0.53 - 9.21 lbs/ton feed	Uncontrolled process emissions, inlet to ESP	204
Arsenic	7440382	3331	Copper smelting-low arsenic ore	Ore roasting	30300502	0.29 - 0.46 lbs/ton feed	Uncontrolled process emissions, inlet to ESP	204
Arsenic	7440382	3331	Primary copper smelting	Copper smelter (primary)	303005	62.5 lb/hr	Range 25-150 lb/hr, emission factor given as mid-range	3
Arsenic	7440382	3331	Primary copper smelting	Furnace and fugitives	303005	0.10 lb/ton Cu produced	Average value, controlled by air curtain secondary hood system, based on one plant only	31
Arsenic	7440382	3331	Primary copper smelting	Slag skimming	303005	0.025 lb/ton slag skimmed	Controlled by air curtain secondary hood system, based on one plant only	31
Arsenic	7440382	3339	Primary lead smelting	Entire process	303010	0.194 lb inorganic As/ton lead produced	Rough estimate only, range 0.028-0.58 lb As/ton lead, fabric filter control	32
Arsenic	7440382	3341	Secondary lead smelting	Area emission - material storage and hauling roads	304004	0.12 lb/ton lead produced	For small smelter	32
Arsenic	7440382	3341	Secondary lead smelting	Blast and reverberatory furnaces	304004	0.0064 lb/ton lead produced	Average rate, controlled with fabric filter	30
Arsenic	7440382	3341	Secondary lead smelting	Blast and reverberatory furnaces	304004	0.0028 lb/ton lead produced	Average rate, controlled with fabric filter and wet scrubber	30
Arsenic	7440382	3341	Secondary lead smelting	Blast and reverberatory furnaces	304004	0.072 lb/ton lead produced	For small smelter, control with fabric filter	32

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Arsenic	7440382	3341	Secondary lead smelting	Fugitives - furnace charging and tapping	304004	0.054 lb/ton lead produced	For small smelter, control with fabric filter	32
Arsenic	7440382	3341	Secondary lead smelting	Special battery smelting furnace and fugitives	304005	6.2 x 10E-4 lb/ton lead produced	Average proc. and fugitive factor, controlled by fabric filter	30
Arsenic	7440382	4953	Municipal waste combustion	Mass burn, refractory facility	501001	0.0238 lb/ton controlled particulate emissions	Controlled by ESP, based on source test	118
Arsenic	7440382	4953	Municipal waste combustion	Mass burn, water wall incinerator	501001	0.47 lb/ton controlled particulate emissions	Controlled by ESP, based on source tests	118
Arsenic	7440382	4953	Municipal waste combustion	Modular incinerator	501001	0.706 lb/ton controlled particulate emissions	Controlled by ESP, based on source tests	118
Arsenic	7440382	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	0.18 lb/ton controlled particulate emissions	Controlled by ESP, based on source tests	118
Arsenic	7440382	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	0.004 lb/ton RDF combusted	100% RDF fuel only, ESP control only, overall average of several source averages, range is 0.002 - 0.008 lb/ton	180
Arsenic	7440382	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	0.007 lb/ton RDF combusted	100% RDF fuel only, uncontrolled, overall range of several source averages	180
Arsenic	7440382	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	0.003 - 0.011 lb/ton RDF combusted	100% RDF only, uncontrolled, overall range of several source averages	180
Arsenic	7440382	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	4.4 x 10E-5 lb/ton RDF combusted	Spray drying after acid gas and PM control, detection limit reported, 100% RDF fuel only, average value, range is 2.0 x 10-5 - 0.0001 lb/ton	180
Arsenic	7440382	4953	Municipal waste combustion	Modular starved-air combustor	501001	0.0002 lb/ton feed	ESP control only, overall average of several source averages, range is 4.4 x 10-6 - 0.00032 lb/ton	180
Arsenic	7440382	4953	Municipal waste combustion	Modular starved-air combustor	501001	0.0034 lb/ton feed	Uncontrolled, overall average of several source averages, range is 5.2 x 10E-5 - 0.001 lb/ton	180
Arsenic	7440382	4953	Municipal waste combustion	Modular excess-air combustor	501001	9 x 10E-6 lb/ton feed	ESP control only, overall average of several source averages, range is 8.6 x 10E-6 - 9.2 x 10E-6 lb/ton	180
Arsenic	7440382	4953	Municipal waste combustion	Modular excess-air combustor	501[illegible]	[illegible] x 10E-10 lb/ton feed	Dry sorbent injection after acid gas and PM control, one data point only	180
Arsenic	7440382	4953	Municipal waste combustion	Mass burn, water wall incinerator	501001	0.0032 lb/ton feed	Uncontrolled, one data point only	180
Arsenic	7440382	4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	4.4 x 10E-5 lb/ton feed	Capacity > 400 tons/day, ESP control only, overall average of several source averages, range is 2.6 x 10E-5 - 6 x 10E-5 lb/ton	180

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Arsenic	7440382	4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	0.0028 lb/ton feed	Capacity > 600 tons/day, Uncontrolled, one data point only	180
Arsenic	7440382	4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	3.8 x 10E-5 lb/ton feed	Capacity > 600 tons/day, spray drying after acid gas and PM control,average of source averages, range is 3.4 x 10E-5 - 4.2 x 10E-5 lb/to	180
Arsenic	7440382	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	4.2 x 10E-5 lb/ton feed	Capacity < 600 tons/day, ESP control only, overall average of several source averages, range is 1.0 x 10E-5 - 7 x 10E-5 lb/ton	180
Arsenic	7440382	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	3.6 x 10E-6 lb/ton feed	Capacity < 600 tons/day, spray drying after acid gas and PM control, one data point only	180
Arsenic	7440382	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	4.0 x 10E - 8 lb/ton feed	Capacity < 600 tons/day, dry sorbent injection after acid gas and PM control, one data point only	180
Arsenic	7440382	4953	Municipal waste combustion	Mass burn waterwall combustor, built before 1980	501001	0.0012 lb/ton feed	ESP control only, overall average of several source averages, range is 0.00026 - 0.002 lb/ton	180
Arsenic	7440382	4953	Municipal waste combustion	Mass burn waterwall combustor, built before 1980	501001	0.008 lb/ton feed	Uncontrolled, overall average of several source averages, range is 0.00084 - 0.015 lb/ton	180
Arsenic	7440382	4953	Municipal waste combustion	Mass burn, refractory facility	501001	1.6 x 10E-6 lb/ton feed	Spray drying after acid gas and PM control, one data point only	180
Arsenic	7440382	4953	Municipal waste combustion	Mass burn, refractory facility	501001	0.0004 lb/ton feed	Uncontrolled, one data point only	180
Arsenic	7440382	4953	Sewage sludge incineration	Fluidized-bed furnace	50100506	0.00012 lb/ton dry sludge	Average of two tests, venturi and impingement scrubber	101
Arsenic	7440382	4953	Sewage sludge incineration	Multiple hearth furnace	50100506	0.003 lb/ton dry sludge	Average of ten tests, scrubber	101
Arsenic	7440382	806	Hospital waste incineration	Incinerator	50200505	1.8 x 10E-4 lb/ton feed	Uncontrolled, test data	167
Asbestos	1332214		Asbestos building waste disposal	Dumping		3.74 x 10E-6 lb/cubic foot waste	Best estimate of uncontrolled emission, range 3.12 x 10E-8 to 0.00131	100
Asbestos	1332214		Asbestos building waste disposal	Leveling and compaction at dump site		1.4 x 10-4 lb/cubic foot waste	Best estimate of uncontrolled emission, range 1.248 x 10E-5 to 3.06 x 10E-4	100
Asbestos	1332214		Asbestos building waste disposal	Wind erosion after first year at dump site		2.9 x 10E-4 lb/cubic foot waste	Best estimate of uncontrolled emission, range 9.4 x 10E-5 to 4.4 x 10E-4	100

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POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Asbestos	1332214		Asbestos building waste disposal	Wind erosion during first year at dump site		0.00237 lb/cubic foot waste	Best estimate of uncontrolled emission, range 6.24 x 10E-4 to 0.00443	100
Asbestos	1332214		Asbestos product usage	Brake linings		10 lb/ton asbestos produced	Uncontrolled	33
Asbestos	1332214		Asbestos product usage	Construction industry		26 lb/ton asbestos produced		33
Asbestos	1332214		Asbestos product usage	Insulating cement		26 lb/ton asbestos produced	Controlled	33
Asbestos	1332214		Asbestos product usage	Steel fireproofing		10 lb/ton asbestos produced	Controlled	33
Asbestos	1332214		Demolition and renovation of buildings	Waste movement to temp. storage and transfer to trucks		8.74 x 10E-6 lb/cubic foot waste	Best estimate of uncontrolled emission, range 9.36 x 10E-8 to 2.84 x 10E-3	100
Asbestos	1332214	1499	Asbestos milling	Entire process	305032	128.1 lb/ton asbestos consumed	Calculated average uncontrolled factor, calculated range 80.64-209.6	100
Asbestos	1332214	1499	Asbestos milling	Entire process	305032	1.492 lb/ton asbestos consumed	Calculated average controlled factor, calculated range 0.008-0.42	100
Asbestos	1332214	1499	Asbestos milling	Entire process	305032	100 lb/ton asbestos produced	No control	33
Asbestos	1332214	1499	Asbestos milling	Entire process	305032	80 lb/ton asbestos produced	90% control	33
Asbestos	1332214	1499	Asbestos milling	Entire process	305032	20 lb/ton asbestos produced	80% control	33
Asbestos	1332214	1499	Asbestos mining	Entire process	305031	4 lb/ton asbestos produced	50% control	33
Asbestos	1332214	1499	Asbestos mining	Hauling	305031	2 lb/ton asbestos produced	Uncontrolled	33
Asbestos	1332214	1499	Asbestos mining	Loading	30503104	2 lb/ton asbestos produced	Uncontrolled	33
Asbestos	1332214	1499	Asbestos mining	Mining	305031	4 lb/ton asbestos produced	Uncontrolled	33
Asbestos	1332214	1499	Asbestos mining	Unloading	30503107	2 lb/ton asbestos produced	Uncontrolled	33
Asbestos	1332214	3292	Asbestos - cement pipe manufacturing	Entire process	30501120	63.48 lb/ton asbestos consumed	Calculated average uncontrolled factor, calculated range 35.2-93.8	100

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Asbestos	1332214	3292	Asbestos - cement pipe manufacturing	Entire process	30501120	0.182 lb/ton asbestos consumed	Calculated average controlled factor, calculated range 0-1.04	100
Asbestos	1332214	3292	Asbestos - cement sheet manufacturing	Entire process	30501120	259.8 lb/ton asbestos consumed	Calculated average uncontrolled factor, calculated range 99.4-455.2	100
Asbestos	1332214	3292	Asbestos - cement sheet manufacturing	Entire process	30501120	0.732 lb/ton asbestos consumed	Calculated average controlled factor, calculated range 0-55.52	100
Asbestos	1332214	3292	Asbestos coatings and sealants manufacturing	Entire process		8.12 lb/ton asbestos consumed	Calculated average uncontrolled factor, calculated range 1.27 x 10E-5 - 2000	100
Asbestos	1332214	3292	Asbestos coatings and sealants manufacturing	Entire process		0.134 lb/ton asbestos consumed	Calculated average controlled factor, calculated range 0-1500	100
Asbestos	1332214	3292	Asbestos friction materials manufacturing	Entire process		884.4 lb/ton asbestos consumed	Calculated average uncontrolled factor, calculated range 4.38-2000	100
Asbestos	1332214	3292	Asbestos friction materials manufacturing	Entire process		5.74 lb/ton asbestos consumed	Calculated average controlled factor, calculated range 0.004-20	100
Asbestos	1332214	3292	Asbestos gaskets and packings manufacturing	Entire process		2.48 lb/ton asbestos consumed	Calculated average uncontrolled factor, calculated range 0.20-17.2	100
Asbestos	1332214	3292	Asbestos gaskets and packings manufacturing	Entire process		0.00082 lb/ton asbestos consumed	Calculated average controlled factor, calculated range 0-0.18	100
Asbestos	1332214	3292	Asbestos insulation materials manufacturing	Entire process		28.6 lb/ton asbestos consumed	Calculated average uncontrolled factor, calculated range 4.76-37	100
Asbestos	1332214	3292	Asbestos insulation materials manufacturing	Entire process		0.48 lb/ton asbestos consumed	Calculated average controlled factor, calculated range 0.048-3.7	100
Asbestos	1332214	3292	Asbestos paper manufacturing	Entire process		0.078 lb/ton asbestos consumed	Calculated average uncontrolled factor, calculated range 0.0002-1.64	100
Asbestos	1332214	3292	Asbestos paper manufacturing	Entire process		0.00076 lb/ton asbestos consumed	Calculated average controlled factor, calculated range 10.2 x 10E-8 to 0.08	100
Asbestos	1332214	3292	Asbestos product fabrication	Asbestos cement products	30501120	1.0 lb/ton asbestos produced	Controlled	33
Asbestos	1332214	3292	Asbestos product fabrication	Asbestos paper		4 lb/ton asbestos produced	Uncontrolled	33
Asbestos	1332214	3292	Asbestos product fabrication	Asbestos paper		1.0 lb/ton asbestos produced	Controlled	33
Asbestos	1332214	3292	Asbestos product fabrication	Drilling asbestos cement sheet		283 fibers/cc air/g asbestos machined	Average of test results	22

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Asbestos	1332214	3292	Asbestos product fabrication	Drilling millboard		105 fibers/cc air/g asbestos machined	Average of test results	22
Asbestos	1332214	3292	Asbestos product fabrication	Floor tile		4 lb/ton asbestos produced	Uncontrolled	33
Asbestos	1332214	3292	Asbestos product fabrication	Floor tile		1.0 lb/ton asbestos produced	Controlled	33
Asbestos	1332214	3292	Asbestos product fabrication	Friction material production		6 lb/ton asbestos produced	Controlled	33
Asbestos	1332214	3292	Asbestos product fabrication	Grinding brake shoes		465 fibers/cc air/g asbestos machined	Average of test results	22
Asbestos	1332214	3292	Asbestos product fabrication	Sawing asbestos cement sheet		1838 fibers/cc air/g asbestos machined	Average of test results, cut-off wheel saw	22
Asbestos	1332214	3292	Asbestos product fabrication	Sawing asbestos cement sheet		305 fibers/cc air/g asbestos machined	Average of test results, toothed blade saw	22
Asbestos	1332214	3292	Asbestos product fabrication	Sawing asbestos millboard		647 fibers/cc air/g asbestos machined	Average of test results, toothed blade saw	22
Asbestos	1332214	3292	Asbestos product fabrication	Textiles		40 lb/ton asbestos produced	Uncontrolled	33
Asbestos	1332214	3292	Asbestos product fabrication	Textiles		2 lb/ton asbestos produced	Controlled	33
Asbestos	1332214	3292	Asbestos textiles manufacturing	Entire process		63.7 lb/ton asbestos consumed	Calculated average uncontrolled factor, calculated range 26.7-88.8	100
Asbestos	1332214	3292	Asbestos textiles manufacturing	Entire process		3.54 lb/ton asbestos consumed	Calculated average controlled factor, calculated range 0.026-35.5	100
Asbestos	1332214	3292	Asbestos-reinforced plastics manufacturing	Entire process		930.8 lb/ton asbestos consumed	Calculated average uncontrolled factor, calculated range 0.96-2000	100
Asbestos	1332214	3292	Asbestos-reinforced plastics manufacturing	Entire process		5.70 lb/ton asbestos consumed	Calculated average controlled factor, calculated range 9.66 x 10-5 - 200	100
Asbestos	1332214	3292	Vinyl/asbestos tile manufacturing	Entire process		10.8 lb/ton asbestos consumed	Calculated average uncontrolled factor, calculated range 0.24-273	100
Asbestos	1332214	3292	Vinyl/asbestos tile manufacturing	Entire process		0.008 lb/ton asbestos consumed	Calculated average controlled factor, calculated range 2.4 x 10-5 to 0.28	100
Barium	7440393		Waste oil combustion	Waste oil-fired boilers (<150 million Btu/hr) or space heaters	1	3.01 lb/1000 gal oil burned	Uncontrolled, based on emissions data and engineering judgement, variable	55

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Barium	7440393		Wood combustion, residential	Woodstove without baffle		4 x 10E-4 lb/ton wood	Uncontrolled, based on one study, nonbaffled stove burning green pine	58
Barium	7440393	226	Woven fabric finishing	Curing oven - resin finish	330001	3.8 x 10E-5 lb/ton fabric	Uncontrolled, average of three tests	52
Barium	7440393	226	Woven fabric finishing	Heat setting	330001	7.2 x 10E-6 lb/ton fabric	Uncontrolled, based on test data	52
Barium	7440393	226	Woven fabric finishing	Tenter frames - resin finishing	330001	8 x 10E-5 lb/ton fabric	Uncontrolled, average of four tests	52
Barium	7440393	226	Woven fabric finishing	Thermosol dyeing	330001	7.8 x 10E-5 lb/ton fabric	Uncontrolled, average of three tests	52
Barium	7440393	25	Wood combustion, industrial	Horizontal return tube	10200906	255.09 lb/10E12 Btu heat input	Sample results, 1 plant, wood flowrate = .514 kg/s, boiler has 3-pass design w/flyash reinjection, uncontrolled	176
Barium	7440393	25	Wood combustion, industrial	Balanced draft wickes stoker-fired industrial boiler	10200906	0.007 lb/ton fuel	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 kg/s, boil. eff. 55.3%	177
Barium	7440393	25	Wood combustion, industrial	Balanced draft wickes stoker-fired industrial boiler	10200906	0.0074 lb/ton fuel	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.54 kg/s, boil. eff. 61.3%	177
Barium	7440393	4953	Municipal waste combustion	Incinerator stack	501001	0.006 lb/ton munic. solid waste-dry wt.	Controlled by spray-baffle scrubber, based on material balance for model incinerator	98
Barium iron oxide	11138117	332	Iron foundries	Electric arc furnace - melting/refining	30400304	0.14-0.98 lbs/ton of iron produced	Uncontrolled emissions	184
Barium iron oxide	11138117	332	Iron foundries	Electric arc furnace - charge and tap cycle	30400304	0.014-0.098 lbs/ton of iron produced	Uncontrolled emissions	184
Benz(a)anthracene	56553		Scrap tire, open burning	Tires in experimental burn hut		0.2374 lb/ton tire	Sum of PAH analy on lie extrat. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.3 kg/hr, controlled	212
Benz(a)anthracene	56553		Scrap tire, open burning	Tires in experimental burn hut		0.172 lb/ton tire	Sum of PAH analy on lie extrat. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.1 kg/hr, controlled	212
Benz(a)anthracene	56553		Scrap tire, open burning	Tires in experimental burn hut		0.232 lb/ton tire	Sum of PAH analy on lie extrat. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.7 kg/hr, controlled	212
Benz(a)anthracene	56553		Scrap tire, open burning	Tires in experimental burn hut		0.0966 lb/ton tire	Sum of PAH analy on lie extrat. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=2.3 kg/hr, controlled	212
Benzaldehyde	100527		Scrap tire, open burning	Tires in experimental burn hut		1.2706 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr, uncontrolled	212

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Benzaldehyde	100527		Scrap tire, open burning	Tires in experimental burn hut		0.784 lb/ton tire	IAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 1.7 kg/hr, uncontrolled	212
Benzaldehyde	100527		Scrap tire, open burning	Tires in experimental burn hut		0.1972 lb/ton tire	IAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 2.3 kg/hr, uncontrolled	212
Benzaldehyde	100527		Scrap tire, open burning	Tires in experimental burn hut		0.5704 lb/ton tire	VOST samples, burn rate = 1.5 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Benzaldehyde	100527		Scrap tire, open burning	Tires in experimental burn hut		0.654 lb/ton tire	VOST samples, burn rate = 2.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Benzaldehyde	100527		Scrap tire, open burning	Tires in experimental burn hut		0.469 lb/ton tire	VOST samples, burn rate = 0.9 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Benzaldehyde	100527		Scrap tire, open burning	Tires in experimental burn hut		0.429 lb/ton tire	VOST samples, burn rate = 1.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Benzaldehyde	100527		Scrap tire, open burning	Tires in experimental burn hut		0.566 lb/ton tire	VOST samples, burn rate = 1.4 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Benzaldehyde	100527		Scrap tire, open burning	Tires in experimental burn hut		0.879 lb/ton tire	VOST samples, burn rate = 0.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Benzaldehyde	100527		Scrap tire, open burning	Tires in experimental burn hut		1.736 lb/ton tire	VOST samples, burn rate = 0.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Benzaldehyde	100527		Scrap tire, open burning	Tires in experimental burn hut		0.369 lb/ton tire	VOST samples, burn rate = 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Benzaldehyde	100527		Scrap tire, open burning	Tires in experimental burn hut		0.979 lb/ton tire	VOST samples, burn rate = 3.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Benzaldehyde	100527		Scrap tire, open burning	Tires in experimental burn hut		0.414 lb/ton tire	VOST samples, burn rate = 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Benzaldehyde	100527		Scrap tire, open burning	Tires in experimental burn hut		0.135 lb/ton tire	VOST samples, burn rate = 2.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Benzaldehyde	100527		Scrap tire, open burning	Tires in experimental burn hut		0.348 lb/ton tire	VOST samples, burn rate = 6.43 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Benzene	71432		Internal combustion engines - mobile	Heavy duty diesel vehicle exhaust emissions		1.10% benzene of exhaust HCs	Engineering Judgement	132
Benzene	71432		Internal combustion engines - mobile	Heavy duty gasoline vehicle exhaust emissions		3.48% benzene of exhaust HCs	Engineering Judgement	132
Benzene	71432		Internal combustion engines - mobile	Light duty diesel truck exhaust emissions		2.4% benzene of exhaust HCs	Engineering Judgement	132

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Benzene	71432		Internal combustion engines - mobile	Light duty diesel vehicle exhaust emissions		2.4% benzene of exhaust HCs	Engineering Judgement	132
Benzene	71432		Internal combustion engines - mobile	Light duty gasoline truck exhaust emissions		3.24% benzene of exhaust HCs	Engineering Judgement	132
Benzene	71432		Internal combustion engines - mobile	Light duty gasoline truck exhaust emissions		1.1% benzene of evaporative HCs	Engineering Judgement	132
Benzene	71432		Internal combustion engines - mobile	Light duty gasoline vehicle, exhaust emissions		0.35-1.53% benzene of evaporative HCs	0.35-0.46% fuel-injected vehicles, 1.11-1.53% carbureted light duty gas vehicles, eng. judgement	132
Benzene	71432		Internal combustion engines - mobile	Light duty gasoline vehicles, 3-way catalyst, exhaust emissions		5.12% benzene of exhaust HCs	Engineering Judgement	132
Benzene	71432		Internal combustion engines - mobile	Light duty gasoline vehicles, 3-way catalyst, exhaust emissions		2.78% benzene of exhaust HCs	Engineering Judgement	132
Benzene	71432		Internal combustion engines - mobile	Light duty gasoline vehicles, noncatalyst/oxidation catalyst, exhaust		3.95% benzene of exhaust HCs	Engineering Judgement	132
Benzene	71432		Natural gas combustion	Boilers, exhaust system	102006	1.18% by vol (or 4% by wt) of total VOC	South Coast study, California, engineering judgement	132
Benzene	71432		Scrap tire, open burning	Tires in experimental burn hut		4.102 lb/ton tire	VOST samples, burn rate = 1.6 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Benzene	71432		Scrap tire, open burning	Tires in experimental burn hut		3.337 lb/ton tire	VOST samples, burn rate = 2.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Benzene	71432		Scrap tire, open burning	Tires in experimental burn hut		4.705 lb/ton tire	VOST samples, burn rate = 0.9 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Benzene	71432		Scrap tire, open burning	Tires in experimental burn hut		3.985 lb/ton tire	VOST samples, burn rate = 1.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Benzene	71432		Scrap tire, open burning	Tires in experimental burn hut		4.706 lb/ton tire	VOST samples, burn rate = 1.4 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Benzene	71432		Scrap tire, open burning	Tires in experimental burn hut		5.695 lb/ton tire	VOST samples, burn rate = 0.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Benzene	71432		Scrap tire, open burning	Tires in experimental burn hut		1.05z lb/ton tire	VOST samples, burn rate = 0.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Benzene	71432		Scrap tire, open burning	Tires in experimental burn hut		3.051 lb/ton tire	VOST samples, burn rate = 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Benzene	71432		Scrap tire, open burning	Tires in experimental burn hut		3.460 lb/ton tire	VOST samples, burn rate = 3.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Benzene	71432		Scrap tire, open burning	Tires in experimental burn hut		4.224 lb/ton tire	VOST samples, burn rate = 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Benzene	71432		Scrap tire, open burning	Tires in experimental burn hut		2.082 lb/ton tire	VOST samples, burn rate = 2.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Benzene	71432		Scrap tire, open burning	Tires in experimental burn hut		2.381 lb/ton tire	VOST samples, burn rate = 6.63 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Benzene	71432		Waste oil combustion	Waste oil-fired boilers (<150 million Btu/h) or space heaters	1	0.0417 lb/1000 gal oil burned	Uncontrolled, based on emissions data and engineering judgement, assumes 97% DRE	99
Benzene	71432		Wood combustion, residential	Small airtight woodstoves, birch wood		0.1356 lb/ton dry fuel burned	Normal high-temperature burning conditions, based on emission tests	97
Benzene	71432		Wood combustion, residential	Small airtight woodstoves, birch wood		2.572 lb/ton dry fuel burned	Starved air conditions, based on emission tests	97
Benzene	71432		Wood combustion, residential	Small airtight woodstoves, spruce wood		0.538 lb/ton dry fuel burned	Starved air conditions, based on emission tests	97
Benzene	71432	191	Agricultural industry-field burning of plastic crop covers	Used black plastic		0.554 mg/m3	Experimental simulation, plastic sheet = 1 lb., GC/FID test from VOST samples	210
Benzene	71432	191	Agricultural industry-field burning of plastic crop covers	Unused black plastic		0.453 mg/m3	Experimental simulation, plastic sheet = 1 lb., GC/FID test from VOST samples	210
Benzene	71432	191	Agricultural industry-field burning of plastic crop covers	Used black plastic		0.280 mg/m3	Experimental simulation, plastic sheet = 1 lb., GC/FID test from VOST samples	210
Benzene	71432	191	Agricultural industry-field burning of plastic crop covers	Unused black plastic		1.085 mg/m3	Experimental simulation, plastic sheet = 1 lb., GC/FID test from VOST samples	210
Benzene	71432	2491	Wood preserving	Incineration of waste	307005	Not detectable	Controlled with baghouse	6
Benzene	71432	2491	Wood preserving	Thermal (pan) evaporation of pentachlorophenol wastewater		<5 mg/m3 gas vented	Average value	6
Benzene	71432	286	Maleic anhydride production	Product recovery absorber	30110002	47 lbs/1000 lbs of maleic anhydride prod	Uncontrolled emissions	182
Benzene	71432	286	Petrochemical production	Pumps	301	3.96 lb/hr	Uncontrolled, estimated emissions from an average plant	172

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Benzene	71432	286	Petrochemical production	Pipeline valves-gas	301	4.21 lb/hr	Uncontrolled, estimated emissions from an average plant	172
Benzene	71432	286	Petrochemical production	Pipeline valves-liquid	301	3.70 lb/hr	Uncontrolled, estimated emissions from an average plant	172
Benzene	71432	286	Petrochemical production	Safety/relief valves	301	3.17 lb/hr	Uncontrolled, estimated emissions from an average plant	172
Benzene	71432	286	Petrochemical production	Open-ended valves-gas	301	0.485 lb/hr	Uncontrolled, estimated emissions from an average plant	172
Benzene	71432	286	Petrochemical production	Open-ended valves-liquid	301	2.79 lb/hr	Uncontrolled, estimated emissions from an average plant	172
Benzene	71432	286	Petrochemical production	Sample connections	301	0.85 lb/hr	Uncontrolled, estimated emissions from an average plant	172
Benzene	71432	286	Petrochemical production	Flanges	301	0.35 lb/hr	Uncontrolled, estimated emissions from an average plant	172
Benzene	71432	286	Petrochemical production	Drain	301	1.05 lb/hr	Uncontrolled, estimated emissions from an average plant	172
Benzene	71432	2865	Chlorobenzene production	Atmospheric distillation vents	3013010	0.64 lb/ton chlorobenzene produced	Uncontrolled	132
Benzene	71432	2865	Chlorobenzene production	Atmospheric distillation vents	3013010	0.0084 lb/ton chlorobenzene produced	Controlled, carbon adsorption, 98.7% efficiency	132
Benzene	71432	2865	Chlorobenzene production	Benzene storage	407036	0.82 lb/ton chlorobenzene	Uncontrolled	132
Benzene	71432	2865	Chlorobenzene production	Benzene storage	407	0.12 lb/ton chlorobenzene	Controlled, internal floating roof, 85% efficiency	132
Benzene	71432	2865	Chlorobenzene production	Fugitive emissions	30130180	1.14 lb/ton chlorobenzene	Uncontrolled	132
Benzene	71432	2865	Chlorobenzene production	Fugitive emissions	30130180	0.32 lb/ton chlorobenzene	Controlled, detection and repair of major leaks, 71% efficiency	132
Benzene	71432	2865	Chlorobenzene production	Tail gas treatment	30130101	1.04 lb/ton chlorobenzene produced	Uncontrolled, hypothetical plant	132
Benzene	71432	2865	Chlorobenzene production	Tail gas treatment	30130101	0.0134 lb/ton chlorobenzene produced	Controlled, carbon adsorption, 98.7% eff., based on hypothetical plant	132
Benzene	71432	2865	Cumene production	Benzene azeotropic drying column	30115602	0.04 lb/ton cumene produced	Uncontrolled, based on hypothetical plant producing 5 x 10E8 lb cumene/yr	132
Benzene	71432	2865	Cumene production	Benzene azeotropic drying column	30115602	0.002 lb/ton cumene produced	Controlled, flare, 95% efficiency	132
Benzene	71432	2865	Cumene production	Benzene recovery column	30115605	0.034 lb/ton cumene produced	Uncontrolled	132
Benzene	71432	2865	Cumene production	Benzene recovery column	30115605	0.0017 lb/ton cumene produced	Controlled, flare, 95% efficiency	132
Benzene	71432	2865	Cumene production	Catalyst mix tank scrubber	30115603	0.32 lb/ton cumene produced	Uncontrolled	132

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Benzene	71432	2865	Cumene production	Catalyst mix tank scrubber	30115403	0.016 lb/ton cumene produced	Controlled, flare, 95% efficiency	132
Benzene	71432	2865	Cumene production	Wash-decanter system	30115404	0.02 lb/ton cumene produced	Uncontrolled, 78.4 wt% benzene	132
Benzene	71432	2865	Cumene production	Wash-decanter system	30115404	0.0008 lb/ton cumene produced	Controlled, flare, 95% efficiency	132
Benzene	71432	2865	Cyclohexane production by benzene hydrogenation process	Fugitive emissions	30115780	0.308 lb/ton cyclohexane produced	Based on model plant with capacity of 1.1 x 10E8 lb/yr, uncontrolled	146
Benzene	71432	2865	Cyclohexane production by benzene hydrogenation process	Fugitive emissions	30115780	0.1028 lb/ton cyclohexane produced	Based on model plant with capacity of 3.31 x 10E8 lb/yr, uncontrolled	146
Benzene	71432	2865	Cyclohexane production by benzene hydrogenation process	Fugitive emissions	30115780	0.014 lb/ton cyclohexane produced	Based on model plant with capacity of 9.51 x 10E8 lb/yr, controlled by inspection/maintenance	146
Benzene	71432	2865	Cyclohexane production by benzene hydrogenation process	Fugitive emissions	30115780	0.0414 lb/ton cyclohexane produced	Based on model plant with capacity of 9.51 x 10E8 lb/yr, uncontrolled	146
Benzene	71432	2865	Cyclohexane production by benzene hydrogenation process	Fugitive emissions	30115780	0.07 lb/ton cyclohexane produced	Based on model plant with 1.1 x 10E8 lb/yr capacity, controlled by inspection/maintenance	146
Benzene	71432	2865	Cyclohexane production by benzene hydrogenation process	Fugitive emissions	30115780	0.0234 lb/ton cyclohexane produced	Based on model plant with 3.31 x 10E8 lb/yr capacity, controlled by inspection/maintenance	146
Benzene	71432	2865	Cyclohexane production by benzene hydrogenation process	Storage	407036	0.85 lb/ton cyclohexane produced	Based on model plant with capacity of 1.1 x 10E8 lb/yr, uncontrolled	146
Benzene	71432	2865	Cyclohexane production by benzene hydrogenation process	Storage	407036	0.842 lb/ton cyclohexane produced	Based on model plant with capacity of 3.31 x 10E8 lb/yr, uncontrolled	146
Benzene	71432	2865	Cyclohexane production by benzene hydrogenation process	Storage	407036	0.84 lb/ton cyclohexane produced	Based on model plant with capacity of 9.51 x 10E8 lb/yr, uncontrolled	146
Benzene	71432	2865	Cyclohexane production by benzene hydrogenation process	Storage	407	0.1272 lb/ton cyclohexane produced	Based on model plant with 1.1 x 10E8 lb/yr capacity, controlled by internal floating-roof tanks	146
Benzene	71432	2865	Cyclohexane production by benzene hydrogenation process	Storage	407	0.1242 lb/ton cyclohexane produced	Based on model plant with 3.31 x 10E8 lb/yr capacity, controlled by internal floating-roof tanks	146

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Benzene	71432	2865	Cyclohexane production by benzene hydrogenation process	Storage	407	0.126 lb/ton cyclohexane produced	Based on model plant with 5.51 x 10E8 lb/yr capacity, controlled by internal floating-roof tanks	146
Benzene	71432	2865	Ethylbenzene/styrene production	Alkylation reactor area vents	30116902	0.6 lb/ton ethylbenz/styrene produced	Uncontrolled, for ethylbenzene production, based on model plant capacity of 6.61 x 10E8 lb/yr	132
Benzene	71432	2865	Ethylbenzene/styrene production	Alkylation reactor area vents	30116902	0.0006 lb/ton ethylbenz/styrene produced	Controlled, process heater 99+% efficiency, based on model plant capacity of 6.61 x 10E8 lb/yr	132
Benzene	71432	2865	Ethylbenzene/styrene production	Atmospheric/pressure column vents	301169	2.4 lb/ton ethylbenzene produced	Uncontrolled, based on model plant with capacity of 6.61 x 10E8 lb/yr	132
Benzene	71432	2865	Ethylbenzene/styrene production	Atmospheric/pressure column vents	301169	0.024-0.96 lb/ton ethylbenz/styrene prod	Controlled, flare 60-99% efficiency, based on model plant with capacity of 6.61 x 10E8 lb/yr	132
Benzene	71432	2865	Ethylbenzene/styrene production	Benzene/toluene vacuum vent	301169	6 lb/ton ethylbenz/styrene produced	Uncontrolled, model plant with capacity of 6.61 x 10E8 lb/yr	132
Benzene	71432	2865	Ethylbenzene/styrene production	Benzene/toluene vacuum vent	301169	0.06-2.4 lb/ton ethylbenz/styrene produc	Controlled, flare 60-99% efficiency, model plant with capacity of 6.61 x 10E8 lb/yr	132
Benzene	71432	2865	Ethylbenzene/styrene production	Fugitive emissions	30116980	0.22 lb/ton ethylbenz/styrene produced	Uncontrolled, model plant with capacity of 6.61 x 10E8 lb/yr	132
Benzene	71432	2865	Ethylbenzene/styrene production	Fugitive emissions	30116980	0.058 lb/ton ethylbenz/styrene produced	Controlled, detection and correction, 74% efficiency, model plant with capacity of 6.61 x 10E8 lb/yr	132
Benzene	71432	2865	Ethylbenzene/styrene production	Hydrogen separation tank	301169	0.006 lb/ton ethylbenz/styrene produced	Uncontrolled, model plant with capacity of 6.61 x 10E8 lb/yr	132
Benzene	71432	2865	Ethylbenzene/styrene production	Hydrogen separation tank	301169	0.00006-0.0024 lb/ton ethylbenz/styrene	Controlled, 60-99% efficiency, flare, model plant with capacity of 6.61 x 10E8 lb/yr	132
Benzene	71432	2865	Ethylbenzene/styrene production	Other vacuum vents	301169	0.1 lb/ton ethylbenz/styrene produced	Uncontrolled, model plant with capacity of 6.61 x 10E8 lb/yr	132
Benzene	71432	2865	Ethylbenzene/styrene production	Other vacuum vents	301169	0.001-0.004 lb/ton ethylbenz/styr prod	Controlled, flare 60-99% efficiency, model plant with capacity of 6.61 x 10E8 lb/yr	132
Benzene	71432	2865	Ethylbenzene/styrene production	Secondary emissions	301169	0.134 lb/ton ethylbenz/styrene produced	Uncontrolled, based on model plant with capacity of 6.61 x 10E8 lb/yr	132

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Benzene	71432	2865	Ethylbenzene/styrene production	Storage and handling emissions	407036	1.14 lb/ton ethylbenz/styrene produced	Uncontrolled, model plant with capacity of 6.61 x 10E8 lb/yr	132
Benzene	71432	2865	Ethylbenzene/styrene production	Storage and handling emissions	407	0.172 lb/ton ethylbenz/styrene produced	Controlled, floating roof, 85% efficiency, model plant with capacity of 6.61 x 10E8 lb/yr	132
Benzene	71432	2865	Ethylbenzene/styrene production	Storage and handling emissions	407036	0.00114 lb/ton ethylbenz/styrene produce	Controlled, vented to flare, 99% efficiency, model plant with capacity of 6.61 x 10E8 lb/yr	132
Benzene	71432	2865	Ethylbenzene/styrene production	Storage and handling emissions	407036	0.228 lb/ton ethylbenze/styrene produced	Controlled, refrigerated vent condenser, 80% efficiency, model plant w/ capac. of 6.61 x 10E8 lb/yr	132
Benzene	71432	2865	Nitrobenzene production	Benzene storage	407	0.085 lb/ton nitrobenzene	Controlled, internal floating roof, 85% eff., based on 1.98 x 10E8 lb/yr capacity model plant	132
Benzene	71432	2865	Nitrobenzene production	Benzene storage	407036	0.562 lb/ton nitrobenzene	Uncontrolled, based on 3.31 x 10E8 lb/yr capacity model plant	132
Benzene	71432	2865	Nitrobenzene production	Benzene storage	407036	0.566 lb/ton nitrobenzene produced	Uncontrolled, based on 1.98 x 10E8 lb/yr capacity model plant	132
Benzene	71432	2865	Nitrobenzene production	Benzene storage	407	0.0842 lb/ton nitrobenzene produced	Controlled, floating roof, 85% eff., based on 3.31 x 10E8 lb/yr capacity model plant	132
Benzene	71432	2865	Nitrobenzene production	Fugitive emissions	30119580	1.26 lb/ton nitrobenzene	Uncontrolled, based on 1.98 x 10E8 lb/yr capacity model plant	132
Benzene	71432	2865	Nitrobenzene production	Fugitive emissions	30119580	0.33 lb/ton nitrobenzene	Contr., 67.7% eff, detect/correct minor leaks/each. seals, based on 1.98 x 10E8 lb/yr cap. model pla	132
Benzene	71432	2865	Nitrobenzene production	Fugitive emissions	30119580	0.76 lb/ton nitrobenzene produced	Uncontrolled, each plant, 42 pumps, 500 process valves, 20 pressure-relief valves	132
Benzene	71432	2865	Nitrobenzene production	Fugitive emissions	30119580	0.198 lb/ton nitrobenzene produced	Contr., 67.7% eff., detect/correct leaks/each. seals, 42 pumps, 500 process valves, 20 pres-rel val.	132
Benzene	71432	2865	Nitrobenzene production	Nitrobenzene stripper	30119505	0.0288 lb/ton nitrobenzene	Controlled, thermal oxidizer, 99% eff., based on 1.98 x 10E8 lb/yr capacity model plant	132
Benzene	71432	2865	Nitrobenzene production	Nitrobenzene stripper	30119505	0.34 lb/ton nitrobenzene	Uncontrolled, based on 1.98 x 10E8 and 3.31 x 10E8 lb/yr capacity model plants	132
Benzene	71432	2865	Nitrobenzene production	Nitrobenzene stripper	30119505	0.0286 lb/ton nitrobenzene	Controlled, thermal oxidizer, 99.0% eff., based on 3.31 x 10E8 lb/yr capacity model plant	132
Benzene	71432	2865	Nitrobenzene production	Reactor and separator	30119502	1.92 lb/ton nitrobenzene	Uncontrolled, based on 198 x 10E8 and 3.31 x 10E8 lb/yr capacity model plants	132

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Benzene	71432	2865	Nitrobenzene production	Secondary emissions	301195	0.20 lb/ton nitrobenzene produced	Uncontrolled, based on 1.98 x 10E8 and 3.31 x 10E8 lb/yr capacity model plants	132
Benzene	71432	2865	Nitrobenzene production	Small benzene storage	407036	0.156 lb/ton nitrobenzene	Uncontrolled, based on 1.98 x 10E8 lb/yr capacity model plant	132
Benzene	71432	2865	Nitrobenzene production	Small benzene storage	407036	0.154 lb/ton nitrobenzene	Uncontrolled, based on 3.31 x 10E8 lb/yr capacity model plant	132
Benzene	71432	2865	Nitrobenzene production	Wash and neutralization	30119504	0.1552 lb/ton nitrobenzene	Controlled, vent absorber, 94.6% eff., based on 1.98 x 10E8 lb/yr capacity model plant	132
Benzene	71432	2865	Nitrobenzene production	Wash and neutralization	30119504	0.1548 lb/ton nitrobenzene produced	Uncontrolled, based on 1.98 x 10E8 and 3.31 x 10E8 lb/yr capacity model plants	132
Benzene	71432	2865	Nitrobenzene production	Wash and neutralization	30119504	0.0162 lb/ton nitrobenzene	Controlled, vent absorber, 94.6% eff., based on 3.31 x 10E8 lb/yr capacity model plant	132
Benzene	71432	2865	Nitrobenzene production	Waste-acid storage	30119506	0.102 lb/ton nitrobenzene	Uncontrolled, based on 1.98 x 10E8 lb/yr capacity model plant	132
Benzene	71432	2865	Nitrobenzene production	Waste-acid storage	30119506	0.096 lb/ton nitrobenzene	Uncontrolled, based on 3.31 x 10E8 lb/yr capacity model plant	132
Benzene	71432	2865	Nitrobenzene production	Waste-acid stripper	30119503	0.34 lb/ton nitrobenzene produced	Uncontrolled, based on 1.98 x 10E8 and 3.31 x 10E8 lb/yr capacity model plants	132
Benzene	71432	2865	Phenol production using cumene process	"Spent air" from the oxidizer	30120202	0.004 lb/ton phenol	At one source, measured at post oxidizer condenser vent	132
Benzene	71432	2869	Aniline production	Process vents	301034	0.0114 lb/ton aniline	Uncontrolled, from data provided by producer	132
Benzene	71432	2869	Benzene storage tanks	External floating roof tank - total emissions	407	0.0681 ton/yr	EF determined for a model benzene tank 140,000 gal vol, 30ft dia, 50turnover/yr, liquid mnt pri seal	202
Benzene	71432	2869	Benzene storage tanks	External floating roof tank - total emissions	407	0.3948 ton/yr	EF determined for a model benzene tank 140,000 gal vol, 30ft dia, 50turnover/yr, liquid mnt pri seal	202
Benzene	71432	2869	Benzene storage tanks	External floating roof tank - total emissions	407	2.544 ton/yr	EF determined for a model benzene tank 140,000 gal vol, 30ft dia, 50turnover/yr, vapor mnt pri seal	202
Benzene	71432	2869	Benzene storage tanks	External floating roof tank - total emissions	407	7.405 ton/yr	EF determined for a model benzene tank 140,000 gal vol, 30ft dia, 50turnover/yr, vapor mntd pri seal	202
Benzene	71432	2869	Benzene storage tanks	External floating roof tank - total emissions	407	0.0959 ton/yr	EF determined for a model benzene tank 140,000 gal vol, 30ft dia, 50turnover/yr, mech shoe seal/rim	202
Benzene	71432	2869	Benzene storage tanks	External floating roof tank - total emissions	407	1.223 ton/yr	EF determined for a model benzene tank 140,000 gal vol, 30ft dia, 50turnover/yr, mech shoe seal	202
Benzene	71432	2869	Benzene storage tanks	Internal floating roof tank - total emissions	407	0.264 ton/yr	EF determined for a model benzene tank 140,000 gal vol, 30ft dia, 50turnover/yr, welded deck/lic mnt	202

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Benzene	71432	2869	Benzene storage tanks	Internal floating roof tank - total emissions	407	0.3306 ton/yr	EF determined for a model benzene tank 140,000 gal vol, 30ft dia, 50turnover/yr, bolted deck/liq ent	202
Benzene	71432	2869	Benzene storage tanks	Internal floating roof tank - total emissions	407	0.374 - 0.485 ton/yr	EF determined for a model benzene tank 140,000 gal vol, 30ft dia, 50turnover/yr, bolted deck/liq ent	202
Benzene	71432	2869	Benzene storage tanks	Internal floating roof tank - total emissions	407	0.895 ton/yr	EF determined for a model benzene tank 140,000 gal vol, 30ft dia, 50turnover/yr, bolted deck/vap ent	202
Benzene	71432	2869	Benzene storage tanks	Fixed roof tank - total emissions	407	10.141 ton/yr	EF determined for a model benzene tank 140,000 gal vol, 30ft dia, 50turnover/yr.	202
Benzene	71432	2869	Caprolactam production	Cyclohexanone purification	30121002	0.032 lb/ton caprolactam produced	Controlled, condenser 90% eff model plant	145
Benzene	71432	2869	Caprolactam production	Neutralization reactor	30121005	0.0024 lb/ton caprolactam produced	Controlled, condenser 70% eff model plant	145
Benzene	71432	2869	Caprolactam production	Phase separation, solvent recovery, and stripping	30121005	0.042 lb/ton caprolactam produced	Controlled, condenser 90% eff model plant	145
Benzene	71432	2869	Chlorobenzene prod. (mono- & di-), direct chlorination	Absorption	30112535	0.004 lb/ton produced	Control uncertain, based on tests and mass balance	95
Benzene	71432	2869	Linear alkylbenzene chlorination process	Atmospheric wash decanter vent	30121124	0.0246 lb/ton LAB produced	Uncontrolled	132
Benzene	71432	2869	Linear alkylbenzene chlorination process	Atmospheric wash decanter vent	30121124	5 x 10E-6 lb/ton LAB produced	Controlled, used as fuel, 99.98% eff.	132
Benzene	71432	2869	Linear alkylbenzene chlorination process	Benzene azeotropic column vent	30121102	0.0074 lb/ton LAB produced	Uncontrolled, all LAB chlorination emission factors based on a 1.9B x 10EB lb/yr hypothetical plant	132
Benzene	71432	2869	Linear alkylbenzene chlorination process	Benzene azeotropic column vent	30121102	1.4B x 10E-6 lb/ton LAB produced	Controlled, used as fuel, 99.98% eff.	132
Benzene	71432	2869	Linear alkylbenzene chlorination process	Benzene stripping column vent	30121125	0.0074 lb/ton LAB produced	Uncontrolled	132
Benzene	71432	2869	Linear alkylbenzene chlorination process	Benzene stripping column vent	30121125	1.4B x 10E-6 lb/ton LAB produced	Controlled, used as fuel, 99.98% eff.	132
Benzene	71432	2869	Linear alkylbenzene chlorination process	Hydrochloric acid absorber vent	30121123	0.5 lb/ton LAB produced	Uncontrolled	132
Benzene	71432	2869	Linear alkylbenzene chlorination process	Hydrochloric acid absorber vent	30121123	1 x 10E-4 lb/ton LAB produced	Controlled, used as fuel, 99.98% eff.	132
Benzene	71432	2869	Linear alkylbenzene olefin process	Benzene azeotropic column vent	30121101	0.0074 lb/ton LAB produced	Uncontrolled, all LAB olefin process emission factors based on 1.9B x 10EB lb/yr hypothetical plant	132

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Benzene	71432	2869	Linear alkylbenzene olefin process	Benzene azeotropic column vent	30121101	1.48 x 10E-6 lb/ton LAB produced	Controlled, used as fuel, 99.98% eff.	132
Benzene	71432	2869	Linear alkylbenzene olefin process	Hydrogen fluoride scrubber column vent	30121103	0.022 lb/ton LAB produced	Uncontrolled	132
Benzene	71432	2869	Linear alkylbenzene olefin process	Hydrogen fluoride scrubber column vent	30121103	4.4 x 10E-4 lb/ton LAB produced	Controlled, used as fuel, 99.98% eff.	132
Benzene	71432	2869	Linear alkylbenzene olefin process	Hydrogen fluoride scrubber column vent	30121103	0.022 lb/ton LAB produced	Controlled, flare, 90% eff.	132
Benzene	71432	2911	Ethylene production from naphtha/gas oil	Charge gas compressor lubricating oil vent, dual compressor train	30119745	8 x 10E-4 lb/ton ethylene produced	Uncontr., hypothetical plant using 50% naphtha/50% gas oil as feed w/ ethylene cap. 1.2 x 10E9 lb/yr	132
Benzene	71432	2911	Ethylene production from naphtha/gas oil	Charge gas compressor lubricating oil vent, single compressor train	30119745	4 x 10E-4 lb/ton ethylene produced	Uncontr., hypothetical plant using 50% naphtha/50% gas oil as feed w/ ethylene cap. 1.2 x 10E9 lb/yr	132
Benzene	71432	2911	Ethylene production from naphtha/gas oil	Intermittent emissions, dual compressor train	301197	0.2022 lb/ton ethylene produced	Uncontr., hypothetical plant using 50% naphtha/50% gas oil as feed w/ ethylene cap. 1.2 x 10E9 lb/yr	132
Benzene	71432	2911	Ethylene production from naphtha/gas oil	Intermittent emissions, dual compressor train	301197	0.0202 - 0.004 lb/ton ethylene produced	Controlled, flares (90-98% efficiency)	132
Benzene	71432	2911	Ethylene production from naphtha/gas oil	Intermittent emissions, single compressor train	301197	1.584 lb/ton ethylene produced	Uncontr., hypothetical plant using 50% naphtha/50% gas oil as feed w/ ethylene cap. 1.2 x 10E9 lb/yr	132
Benzene	71432	2911	Ethylene production from naphtha/gas oil	Intermittent emissions, single compressor train	301197	0.1584-0.0316 lb/ton ethylene produced	Controlled, flares (90-98% efficiency)	132
Benzene	71432	2911	Ethylene production from naphtha/gas oil	Storage tank emissions	407036	0.294 lb/ton ethylene produced	Uncontrolled	132
Benzene	71432	2911	Ethylene production from naphtha/gas oil	Storage tank emissions	407	0.0442 lb/ton ethylene produced	Controlled, floating roof tank, 85% efficiency	132
Benzene	71432	2911	Gasoline storage at bulk terminals	External floating roof, working loss	404001	(0.46 x 10E-7 Gl/Mg/yr, G is throughput	Based on a capacity of 36,000 bbls	132
Benzene	71432	2911	Gasoline storage at bulk terminals	Fixed-roof storage tanks - breathing losses	404001	1.10 x 10E-7 lb/year tank of gasoline	Based on terminal with 251,000 gal/day and four storage tanks for gasoline	132
Benzene	71432	2911	Gasoline storage at bulk terminals	Fixed-roof storage tanks - working losses	404001	4.41 x 10E-7 lb/year tank of gasoline	Based on terminal with 251,000 gal/day and four storage tanks for gasoline	132
Benzene	71432	2911	Gasoline storage at bulk terminals	Storage loss, primary seal, external floating roof	404001	1.1 x 10E-7 lb/year/tank of gasoline	Based on a capacity of 36,000 bbls	132

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Benzene	71432	2911	Gasoline storage at bulk terminals	Storage loss, secondary metallic shoe seal, external floating roof	404001	4.41 x 10E-8 lb/year/tank of gasoline	Based on a capacity of 34,000 bbls	132
Benzene	71432	2911	Petroleum refinery with cracking/reforming	Fugitive emissions	306	7.2 lb/ton total HC	Assumes fugitives are 0.36% benzene	92
Benzene	71432	2911	Petroleum refinery without cracking/reforming	Fugitive emissions	306	0.72 lb/ton total HC	Assumes benzene is 0.036% of total HC	92
Benzene	71432	3312	Coke oven gas combustion	Boiler emission stream	39000702	0.42% by vol (1.90% by wt) of total VOC	Uncontrolled	132
Benzene	71432	3312	Coke production, by-product recovery process	BTX storage	407	0.0116 lb/ton coke produced	Uncontrolled	132
Benzene	71432	3312	Coke production, by-product recovery process	BTX storage	407	2.4 x 10E-4 lb/ton coke produced	Coke oven gas blanketing from gas holder, 98% efficiency	132
Benzene	71432	3312	Coke production, by-product recovery process	BTX storage	407	1.16 x 10E-3 lb/ton coke produced	Wash-oil scrubber, 90% efficiency	132
Benzene	71432	3312	Coke production, by-product recovery process	Benzene storage	407	0.0116 lb/ton coke produced	Uncontrolled	132
Benzene	71432	3312	Coke production, by-product recovery process	Benzene storage	407	2.4 x 10E-4 lb/ton coke produced	Controlled, nitrogen or natural gas blanketing system, 98% efficiency	132
Benzene	71432	3312	Coke production, by-product recovery process	Benzene storage	407	1.16 x 10E-3 lb/ton coke produced	Wash-oil scrubber, 90% efficiency	132
Benzene	71432	3312	Coke production, by-product recovery process	Cooling tower, direct water	303003	0.54 lb/ton coke produced	Uncontrolled, based on information in BID for Benzene Emis. from Coke By-product Recovery Plants	132
Benzene	71432	3312	Coke production, by-product recovery process	Cooling tower, direct water	303003	0.102 lb/ton coke produced	Controlled, use tar bottom final cooler, 81% control efficiency	132
Benzene	71432	3312	Coke production, by-product recovery process	Cooling tower, direct water	303003	Negligible	Use wash oil final cooler, 100% efficiency	132
Benzene	71432	3312	Coke production, by-product recovery process	Cooling tower, tar bottom	303003	0.140 lb/ton coke produced	Uncontrolled	132

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Benzene	71432	3312	Coke production, by-product recovery process	Cooling tower, tar bottom	303003	Negligible	Use wash oil final cooler, 100% efficiency	132
Benzene	71432	3312	Coke production, by-product recovery process	Excess-ammonia liquor tank	303003	0.018 lb/ton coke produced	Uncontrolled	132
Benzene	71432	3312	Coke production, by-product recovery process	Excess-ammonia liquor tank	303003	3.6 x 10E-4 lb/ton coke produced	Coke oven gas blanketing from collecting main, 98% efficiency	132
Benzene	71432	3312	Coke production, by-product recovery process	Flushing-liquor circulation tank	303003	0.018 lb/ton coke produced	Uncontrolled	1, 132
Benzene	71432	3312	Coke production, by-product recovery process	Flushing-liquor circulation tank	303003	3.6 x 10E-4 lb/ton coke produced	Coke oven gas blanketing from collecting main, 98% efficiency	132
Benzene	71432	3312	Coke production, by-product recovery process	Light-oil condenser vent	303003	0.178 lb/ton coke produced	Uncontrolled	132
Benzene	71432	3312	Coke production, by-product recovery process	Light-oil condenser vent	303003	7.0036 lb/ton coke produced	Coke oven gas blanketing from gas holder, 98% efficiency	132
Benzene	71432	3312	Coke production, by-product recovery process	Light-oil storage	407	0.0116 lb/ton coke produced	Uncontrolled	132
Benzene	71432	3312	Coke production, by-product recovery process	Light-oil storage	407	2.4 x 10E-4 lb/ton coke produced	Controlled, coke oven gas blanketing from gas holder, 98% efficiency	132
Benzene	71432	3312	Coke production, by-product recovery process	Light-oil storage	407	1.16 x 10E-3 lb/ton coke produced	Wash-oil scrubber, 90% efficiency	132
Benzene	71432	3312	Coke production, by-product recovery process	Light-oil sump	303003	0.03 lb/ton coke produced	Uncontrolled	132
Benzene	71432	3312	Coke production, by-product recovery process	Light-oil sump	303003	6 x 10E-4 lb/ton coke produced	Controlled, source enclosure, 98% efficiency	132
Benzene	71432	3312	Coke production, by-product recovery process	Naphthalene processing	303003	0.04 lb/ton produced	Uncontrolled	132

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Benzene	71432	3312	Coke production, by-product recovery process	Naphthalene separation	303003	0.174 lb/ton coke produced	Uncontrolled	132
Benzene	71432	3312	Coke production, by-product recovery process	Tar decanter	303003	0.184 lb/ton coke produced	Uncontrolled	132
Benzene	71432	3312	Coke production, by-product recovery process	Tar decanter	303003	7.8 x 10E-3 lb/ton coke produced	Controlled, coke oven gas blanketing from collecting main, 95% efficiency	132
Benzene	71432	3312	Coke production, by-product recovery process	Tar dewatering	303003	0.042 lb/ton coke produced	Uncontrolled	132
Benzene	71432	3312	Coke production, by-product recovery process	Tar dewatering	303003	0.0042 lb/ton coke produced	Controlled, wash oil scrubber, 90% efficiency	132
Benzene	71432	3312	Coke production, by-product recovery process	Tar dewatering	303003	8.4 x 10E-4 lb/ton coke produced	Controlled, coke oven gas blanketing from collecting main, 98% efficiency	132
Benzene	71432	3312	Coke production, by-product recovery process	Tar storage	303003	0.024 lb/ton coke produced	Uncontrolled	132
Benzene	71432	3312	Coke production, by-product recovery process	Tar storage	303003	4.8 x 10E-4 lb/ton coke produced	Controlled, coke oven gas blanketing from collecting oven, 98% efficiency	132
Benzene	71432	3312	Coke production, by-product recovery process	Tar storage	303003	2.4 x 10E-3 lb/ton coke produced	Controlled, wash-oil scrubber, 90% efficiency	132
Benzene	71432	3312	Coke production, by-product recovery process	Tar-intercepting sump	303003	0.190 lb/ton coke produced	Uncontrolled	133
Benzene	71432	3312	Coke production, by-product recovery process	Tar-intercepting sump	303003	0.0038 lb/ton coke produced	Controlled, coke oven gas blanketing from collecting main, 98% efficiency	132
Benzene	71432	3312	Coke production, by-product recovery process	Wash-oil circulation tank	303003	7.6 x 10E-3 lb/ton coke produced	Uncontrolled	132
Benzene	71432	3312	Coke production, by-product recovery process	Wash-oil circulation tank	303003	1.52 x 10E-3 lb/ton coke produced	Controlled, 98% efficiency, coke oven gas blanketing from gas holder	132

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Benzene	71432	3312	Coke production, by-product recovery process	Wash-oil decanter	303003	7.6 x 10E-3 lb/ton coke produced	Uncontrolled	132
Benzene	71432	3312	Coke production, by-product recovery process	Wash-oil decanter	303003	1.52 x 10E-4 lb/ton coke produced	Controlled, 98% efficiency, coke oven gas blanketing from gas holder	132
Benzene	71432	4491	Gasoline loading at bulk plants	Gasoline loading racks, splash loading	404002	0.0718 lb/10E3 gal gasoline	Terminal with 251,000 gal/day, four storage tanks for gasoline	133
Benzene	71432	4491	Gasoline loading at bulk plants	Gasoline loading racks, submerged loading	404002	0.0292 lb/10E3 gal gasoline	Terminal with 251,000 gal/day, four storage tanks for gasoline	132
Benzene	71432	4491	Gasoline loading at bulk plants	Submerged loading (balance service)	404002	0.0492 lb/10E3 gal gasoline	Terminal with 251,000 gal/day, four storage tanks for gasoline	132
Benzene	71432	4491	Gasoline loading in marine vessels	Barge, gas-freed, any cargo	406002	0.0125 lb/10E3 gal gas transferred	Uncontrolled, assuming a benzene/VOC ratio of 0.004, no basis given	132
Benzene	71432	4491	Gasoline loading in marine vessels	Barge, typical situation, any cargo	406002	0.0209 lb/10E3 gal gas transferred	Uncontrolled, assuming a benzene/VOC ratio of 0.006, no basis given	132
Benzene	71432	4491	Gasoline loading in marine vessels	Barge, uncleaned, volatile previous cargo	40600238	0.0234 lb/10E3 gal gas transferred	Uncontrolled, assuming a benzene/VOC ratio of 0.004, no basis given	132
Benzene	71432	4491	Gasoline loading in marine vessels	Ship/ocean barge any condition, nonvolatile previous cargo	4060023	0.00417 lb/10E3 gal gas transferred	Uncontrolled, assuming a benzene/VOC ratio of 0.006, no basis given	132
Benzene	71432	4491	Gasoline loading in marine vessels	Ship/ocean barge ballasted, volatile previous cargo	40600235	0.01 lb/10E3 gal gas transferred	Uncontrolled, assuming a benzene/VOC ratio of 0.006, no basis given	132
Benzene	71432	4491	Gasoline loading in marine vessels	Ship/ocean barge cleaned, volatile previous cargo	4060023	0.00918 lb/10E3 gal gas transferred	Uncontrolled, assuming a benzene/VOC ratio of 0.006, no basis given	132
Benzene	71432	4491	Gasoline loading in marine vessels	Ship/ocean barge gas-freed, volatile previous cargo	4060023	0.00417 lb/10E3 gal gas transferred	Uncontrolled, assuming a benzene/VOC ratio of 0.006, no basis given	132
Benzene	71432	4491	Gasoline loading in marine vessels	Ship/ocean barge typical situation, any cargo	4060023	0.0108 lb/10E3 gal gas transferred	Uncontrolled, assuming a benzene/VOC ratio of 0.006, no basis given	132
Benzene	71432	4491	Gasoline loading in marine vessels	Ship/ocean barge uncleaned, volatile previous cargo	40600237	0.014 lb/10E3 gal gas transferred	Uncontrolled, assuming a benzene/VOC ratio of 0.004, no basis given	132
Benzene	71432	4491	Gasoline loading in marine vessels	Tanker ballasting	40600241	0.00501 lb/10E3 gal gas transferred	Uncontrolled, assuming a benzene/VOC ratio of 0.004, no basis given	132

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Benzene	71432	4491	Gasoline loading in marine vessels	Transit	40600242	0.016 lb (per wt)/10E3 gal gas transfer	Uncontrolled, assuming a benzene/VOC ratio of 0.006, no basis given	132
Benzene	71432	4491	Gasoline storage at bulk plants	Storage tanks, fixed roof breathing loss	404002	0.03 lb/10E3 gal gasoline	Based on benzene/vapor ratio of 0.006, typical bulk plant w/ gas throughput of 5019 gal/day	132
Benzene	71432	4491	Gasoline storage at bulk plants	Storage tanks, fixed roof draining loss	404002	0.0225 lb/10E3 gal gasoline	Terminal with 251,000 gal/day, four storage tanks for gasoline	132
Benzene	71432	4491	Gasoline storage at bulk plants	Storage tanks, fixed roof filling loss	404002	0.0874 lb/10E3 gal gasoline	Terminal with 251,000 gal/day, four storage tanks for gasoline	132
Benzene	71432	4581	Internal combustion engines - mobile	Jet engine exhaust	2	13.4 lb/ton total hydrocarbons emitted	Benzene assumed to be 0.067% of HC emissions	92
Benzene	71432	4925	Coke by-product plants	Open-ended lines	303003	0.089 lb/day	Uncontrolled fugitive emissions, avg. value, range is 0.086 - 0.093 lb/day	171
Benzene	71432	4925	Coke by-product plants	Sampling connections	303003	0.40 lb/day	Uncontrolled fugitive emissions, avg. value, range is 0.37 - 0.42 lb/day	171
Benzene	71432	4925	Coke by-product plants	Pressure relief devices	303003	6.5 lb/day	Uncontrolled fugitive emissions, avg. value, range is 6.17 - 6.83 lb/day	171
Benzene	71432	4925	Coke by-product plants	Exhausters	303003	0.58 lb/day	Uncontrolled fugitive emissions, avg. value, range is 0.55 - 0.62 lb/day	171
Benzene	71432	4925	Coke by-product plants	Pumps	303003	4.4 lb/day	Uncontrolled fugitive emissions, avg. value, range is 4.2 - 4.6 lb/day	171
Benzene	71432	4925	Coke by-product plants	Valves	303003	0.42 lb/day	Uncontrolled fugitive emissions, avg. value, range is 0.40 - 0.44 lb/day	171
Benzene	71432	4925	Coke by-product plants	Wash-oil circulation tank	303003	4.6 lb/day	Uncontrolled fugitives	171
Benzene	71432	4925	Coke by-product plants	Wash-oil decanter	303003	0.004 lb/ton coke	Uncontrolled	171
Benzene	71432	4925	Coke by-product plants	Excess-ammonia liquor tank	303003	0.013 lb/ton coke	Uncontrolled	171
Benzene	71432	4925	Coke by-product plants	Flushing-liquor circulation tank	303003	0.013 lb/ton coke	Uncontrolled	171
Benzene	71432	4925	Coke by-product plants	Benzene storage	303003	0.006 lb/ton coke	Uncontrolled	171
Benzene	71432	4925	Coke by-product plants	BTX storage	303003	0.006 lb/ton coke	Uncontrolled	171
Benzene	71432	4925	Coke by-product plants	Light-oil storage	303003	0.006 lb/ton coke	Uncontrolled	171
Benzene	71432	4925	Coke by-product plants	Light-oil sump	303003	0.016 lb/ton coke	Uncontrolled	171

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Benzene	71432	4925	Coke by-product plants	Tar storage	303003	0.011 lb/ton coke	Uncontrolled	171
Benzene	71432	4925	Coke by-product plants	Tar decanter	303003	0.072 lb/ton coke	Uncontrolled	171
Benzene	71432	4925	Coke by-product plants	Tar dewatering	303003	0.019 lb/ton coke	Uncontrolled	171
Benzene	71432	4925	Coke by-product plants	Tar-intercepting sump	303003	0.09 lb/ton coke	Uncontrolled	171
Benzene	71432	4925	Coke by-product plants	Light-oil condenser vent	303003	0.096 lb/ton coke	Uncontrolled	171
Benzene	71432	4925	Coke by-product plants	Naphthalene separation and processing	303003	0.158 lb/ton coke	Uncontrolled	171
Benzene	71432	4925	Coke by-product plants	Cooling tower, tar bottom	303003	0.102 lb/ton coke	Uncontrolled	171
Benzene	71432	4925	Coke by-product plants	Cooling tower, direct water	303003	0.394 lb/ton coke	Uncontrolled	171
Benzene	71432	4925	Ethylene production from naphtha/gas oil	Fugitive emissions	30119749	0.0918 lb/ton ethylene produced	Uncontrolled	132
Benzene	71432	4925	Ethylene production from naphtha/gas oil	Fugitive emissions	30119749	0.0176 lb/ton ethylene produced	Detection/correction of leaks	132
Benzene	71432	4925	Ethylene production from naphtha/gas oil	Secondary sources (wastewater, etc.)	301197	0.0434 lb/ton ethylene produced	Uncontrolled	132
Benzene	71432	4953	Sewage sludge incineration	Fluidized-bed furnace	50100SCC	8 x 10E-4 lb/ton dry sludge	One test, scrubber	101
Benzene	71432	4953	Sewage sludge incineration	Multiple hearth furnace	50100506	0.0204 lb/ton dry sludge	Average of five tests, scrubber	101
Benzene	71432	4953	Sewage sludge incineration	Stack gases	50200506	9-31 ug/dscm	Emission tests using volatile organic sampling train	132
Benzene	71432	4953	Wastewater treatment	POTW	50100701	1140 lb/ton of benzene in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
Benzene	71432	5032	Asphalt distribution/use	Entire process		0.077 lb/ton asphalt applied	Benzene assumed to be 9.6% of THC	92
Benzene	71432	5171	Gasoline loading at bulk terminals and bulk plants	Balance service	40600014	0.0492 lb benz vap/10E3 gal gas transfer	Uncontrolled, assuming a benzene/VOC ratio of 0.006, no basis given	132
Benzene	71432	5171	Gasoline loading at bulk terminals and bulk plants	Splash	40600136	0.0292 lb benz vap/10E3 gal gas transfer	Uncontrolled, assuming a benzene/VOC ratio of 0.006, no basis given	132
Benzene	71432	5171	Gasoline loading at bulk terminals and bulk plants	Submerged (either top or bottom submerged)	40600131	0.0718 lb benz vap/10E3 gal gas transfer	Uncontrolled, assuming a benzene/VOC ratio of 0.006, no basis given	132

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Benzene	71432	5541	Gasoline marketing activities	Automobile refueling displacement losses	40600401	0.0459 lb/10E3 gal gasoline	Uncontrolled, based on benz./vapor ratio of 0.004 typical bulk plt w/ gas thruput of 5019 gal/day	132
Benzene	71432	5541	Gasoline marketing activities	Automobile refueling displacement losses, Stage II	404004	0.0067 lb/10E3 gal gasoline	Controlled, based on benz./vapor ratio of 0.004 typical bulk plt w/ gas thruput of 5019 gal/day	132
Benzene	71432	5541	Gasoline marketing activities	Spillage	40600402	0.00417 lb/10E3 gal gasoline throughput	Controlled, based on benz./vapor ratio of 0.004 typical bulk plt w/ gas thruput of 5019 gal/day	132
Benzene	71432	5541	Gasoline marketing activities	Vehicle refueling, vapor loss	40600301	0.064 lb/gal of gas pumped		4
Benzene	71432	5541	Gasoline storage at service stations	Underground storage tanks, breathing losses	40600307	0.00584 lb/10E3 gal gasoline	Terminal with 251,000 gal/day, four storage tanks for gasoline	132
Benzene	71432	5541	Gasoline storage at service stations	Underground storage tanks, tank filling losses (balanced submerged)	40600306	0.00167 lb/10E3 gal gasoline	Terminal with 251,000 gal/day, four storage tanks for gasoline	132
Benzene	71432	5541	Gasoline storage at service stations	Underground storage tanks, tank filling losses (splash fill)	40600301	0.0693 lb/10E3 gal gasoline	Terminal with 251,000 gal/day, four storage tanks for gasoline	132
Benzene	71432	5541	Gasoline storage at service stations	Underground storage tanks, tank filling losses (submerged fill)	40600302	0.0442 lb/10E3 gal gasoline	Terminal with 251,000 gal/day, four storage tanks for gasoline	132
Benzene	71432	806	Hospital waste incineration		50200505	0.1-0.4 lb/hr benzene	Test report by California Air Resources Board, engineering judgement	132
1,2-Benzisothiazol-3-one, 1,1-dioxide	81072		Scrap tire, open burning	Tires in experimental burn hut		0.661 lb/ton tire	RAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr, uncontrolled	212
Benzo(a)pyrene	50328		Internal combustion engines - mobile	4 cylinder car engine		1.84 x 10E-10 lb/mile	4 cylinder catalyst, 1981 car	114
Benzo(a)pyrene	50328		Internal combustion engines - mobile	8 cylinder car engine		9.19 x 10E-9 lb/mile	Catalyst removed, 1980 car	114
Benzo(a)pyrene	50328		Internal combustion engines - mobile	8 cylinder engine		6 x 10E-9 lb/mile	Precatalyst, 1974 car	114
Benzo(a)pyrene	50328		Internal combustion engines - mobile	Diesel car engine		0.0078 lb/ton particulate	Range 0.0026 - 0.0146 lb/ton	114
Benzo(a)pyrene	50328		Internal combustion engines - mobile	Turbocharged diesel truck engine		5 x 10E-5 lb/ton fuel	1260 rpm, no load	114
Benzo(a)pyrene	50328		Internal combustion engines - mobile	Turbocharged diesel truck engine		1.6 x 10E-5 lb/ton fuel	1260 rpm, half load	114

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Benzo(a)pyrene	50328		Internal combustion engines - mobile	Turbocharged diesel truck engine		3.2 x 10E-5 lb/ton fuel	1800 rpm, full load	114
Benzo(a)pyrene	50328		Internal combustion engines - mobile	V-8 gasoline engine		5.91 x 10E-8 lb/mile	Uncontrolled, mounted on dynamometer, est. 8000-12,000 mileage, incl. BaP fr. condenser collect. tar	114
Benzo(a)pyrene	50328		Internal combustion engines - mobile	V-8 gasoline engine		3.92 x 10E-8 lb/mile	Uncontrolled, mounted on dynamometer, estimated 19,000-25,000 mileage	114
Benzo(a)pyrene	50328		Internal combustion engines - mobile	V-8 gasoline engine		9.29 x 10E-8 lb/mile	Uncontrolled, mounted on dynamometer, estimated 25,500-29,000 mileage	114
Benzo(a)pyrene	50328		Scrap tire, open burning	Tires in experimental burn hut		0.258 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.3 kg/hr, controlled	212
Benzo(a)pyrene	50328		Scrap tire, open burning	Tires in experimental burn hut		0.197 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.1 kg/hr, controlled	212
Benzo(a)pyrene	50328		Scrap tire, open burning	Tires in experimental burn hut		0.221 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.7 kg/hr, controlled	212
Benzo(a)pyrene	50328		Scrap tire, open burning	Tires in experimental burn hut		0.117 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=2.3 kg/hr, controlled	212
Benzo(a)pyrene	50328		Wood combustion, residential	Small airtight woodstoves, birch wood		0.0012 lb/ton dry fuel burned	Boreal high-temperature burning conditions, based on emission tests	57
Benzo(a)pyrene	50328		Wood combustion, residential	Small airtight woodstoves, birch wood		4.8 x 10E-4 lb/ton dry fuel burned	Starved air conditions, based on emission tests	57
Benzo(a)pyrene	50328		Wood combustion, residential	Small airtight woodstoves, spruce wood		1 x 10E-4 lb/ton dry fuel burned	Boreal high-temperature burning conditions, based on emission tests	57
Benzo(a)pyrene	50328		Wood combustion, residential	Small airtight woodstoves, spruce wood		0.00124 lb/ton dry fuel burned	Starved air conditions, based on emission tests	57
Benzo(a)pyrene	50328	2911	Petroleum refinery	Fluidized bed catalytic cracker unit regenerator	30400201	0.48 lb/1000 barrels of feed	Uncontrolled	148
Benzo(a)pyrene	50328	2911	Petroleum refinery	Fluidized bed catalytic cracker unit regenerator	30400201	3.11 x 10E-5 lb/1000 barrels of feed	Controlled by CO boiler	148
Benzo(a)pyrene	50328	3312	Coke production, by-product recovery process	Slot oven coking - coke quenching	30300304	1 x 10E-6 lb/ton coal charged		114
Benzo(a)pyrene	50328	3312	Coke production, by-product recovery process	Slot oven coking - door leaks	30300308	141 ng/Nm3	Uncontrolled	114

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Benzo(a)pyrene	50328	3312	Coke production, by-product recovery process	Slot oven coking - door leaks	30300308	1.8 ng/Mg	Wet ESP	114
Benzo(a)pyrene	50328	3313	Ferroalloy production	Electric arc furnace ferrosilicon production, semi-sealed furnace	30300702	1.0 g/Mw-hr energy consumed by furnace	Low energy wet scrubber, represents gaseous and particulate POM	114
Benzo(a)pyrene	50328	4952	Sewage sludge incineration	Incinerator	5	8 x 10E-6 lb/ton dry sludge feed	Average of 2 x 10E-6, 1.4 x 10E-5, 2 incinerators each with wet scrubber, 1 common stack	114
Benzo(a)pyrene	50328	4953	Municipal waste combustion	Incinerator	50100101	9.8 ng/m3	ESP, represents both gaseous and particulate POM	114
Benzo(a)pyrene	50328	4953	Municipal waste combustion	Mass burn, heat recovery facility	501001	9.4 x 10E-5 lb/ton of waste combusted	Controlled by ESP, based on source test data	118
Benzo(a)pyrene	50328	4953	Municipal waste combustion	Mass burn, heat recovery facility	501001	6 x 10E-6 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Benzo(a)pyrene	50328	4953	Municipal waste combustion	Mass burn, nonheat recovery facility	501001	9.4 x 10E-5 lb/ton of waste combusted	Controlled by ESP, based on source test data	118
Benzo(a)pyrene	50328	4953	Municipal waste combustion	Mass burn, nonheat recovery facility	501001	6 x 10E-6 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Benzo(a)pyrene	50328	4953	Municipal waste combustion	Mass burn, water wall incinerator	501001	9.6 x 10E-5 lb/ton waste burned	ESP	114
Benzo(a)pyrene	50328	4953	Municipal waste combustion	Modular incinerator	501001	7.6 x 10E-6 lb/ton of waste combusted	Controlled by ESP, based on source test data	118
Benzo(a)pyrene	50328	4953	Municipal waste combustion	Modular incinerator	501001	4 x 10E-7 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Benzo(a)pyrene	50328	4953	Municipal waste combustion	Multiple chamber, reciprocating stoker grate	50100101	2.7 x 10E-5 lb/ton waste burned	Uncontrolled, represents particulate POM	114
Benzo(a)pyrene	50328	4953	Municipal waste combustion	Multiple chamber, reciprocating stoker grate	50100101	4 x 10E-7 lb/ton waste burned	Wet scrubber, represents particulate POM	114
Benzo(a)pyrene	50328	4953	Municipal waste combustion	Multiple chamber, traveling grate incinerator	50100101	3.4 x 10E-7 lb/ton waste burned	Represents particulate POM, settling chamber	114
Benzo(a)pyrene	50328	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	2.62 x 10E-4 lb/ton waste burned	ESP	114
Benzo(a)pyrene	50328	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	2.4 x 10E-4 lb/ton of waste combusted	Controlled by ESP, based on source test data	118, 180

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Benzo(a)pyrene	50328	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	1.6 x 10E-8 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Benzo(a)pyrene	50328	4953	Municipal waste combustion	Modular starved-air combustor	501001	7.8 x 10E-6 lb/ton feed	Uncontrolled, one data point only	180
Benzo(a)pyrene	50328	4953	Municipal waste combustion	Modular excess-air combustor	501001	4.6 x 10E-5 lb/ton feed	ESP control only, one data point only	180
Benzo(a)pyrene	50328	4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	0.00012 lb/ton feed	Capacity > 600 tons/day, ESP control only, one data point only, detection limit reported	180
Benzo(a)pyrene	50328	4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	0.00012 lb/ton feed	Capacity > 600 tons/day, uncontrolled, one data point only, detection limit reported	180
Benzo(a)pyrene	50328	4953	Municipal waste combustion	Mass burn waterwall combustor, built before 1980	501001	9.6 x 10E-6 lb/ton feed	ESP control only, overall average of several source averages, range is 8.0 x 10E-6 - 1.1 x 10E-5	180
Benzo(a)pyrene	50328	4953	Solid waste incineration, commercial	Multiple chamber with auxilliary gas burner	50100101	1.146 x 10E-3 lb/ton waste burned	Uncontrolled, represents primarily particulate POM	114
Benzo(a)pyrene	50328	4953	Solid waste incineration, commercial	Single chamber incinerator	50100102	2.34 x 10E-4 lb/ton waste burned	Uncontrolled, represents particulate POM	114
Benzo(b)fluoranthene			Scrap tire, open burning	Tires in experimental burn hut		0.194 lb/ton tire	Sum of PAH analy on lig extrat. of XAD-2 test & filter compnt. shred condition = 2" by 2" piece, burn rate=1.3 kg/hr, controlled	212
Benzo(b)fluoranthene			Scrap tire, open burning	Tires in experimental burn hut		0.159 lb/ton tire	Sum of PAH analy on lig extrat. of XAD-2 test & filter compnt. shred condition = 2" by 2" piece, burn rate=1.1 kg/hr, controlled	212
Benzo(b)fluoranthene			Scrap tire, open burning	Tires in experimental burn hut		0.193 lb/ton tire	Sum of PAH analy on lig extrat. of XAD-2 test & filter compnt. shred condition = 2" by 2" piece, burn rate=1.7 kg/hr, controlled	212
Benzo(b)fluoranthene			Scrap tire, open burning	Tires in experimental burn hut		0.084 lb/ton tire	Sum of PAH analy on lig extrat. of XAD-2 test & filter compnt. shred condition = 2" by 2" piece, burn rate=2.3 kg/hr, controlled	212
Benzodiazine			Scrap tire, open burning	Tires in experimental burn hut		0.045 lb/ton tire	VOST samples burn rate = 1.5 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Benzodiazine			Scrap tire, open burning	Tires in experimental burn hut		0.062 lb/ton tire	VOST samples burn rate = 2.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Benzodiazine			Scrap tire, open burning	Tires in experimental burn hut		0.049 lb/ton tire	VOST samples burn rate = 1.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Benzodiazine			Scrap tire, open burning	Tires in experimental burn hut		0.051 lb/ton tire	VOST samples burn rate = 1.4 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Benzodiazine			Scrap tire, open burning	Tires in experimental burn hut		0.049 lb/ton tire	VOST samples burn rate = 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Benzodiazine			Scrap tire, open burning	Tires in experimental burn hut		0.023 lb/ton tire	VOST samples burn rate = 3.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Benzodiazine			Scrap tire, open burning	Tires in experimental burn hut		0.042 lb/ton tire	VOST samples burn rate = 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Benzodiazine			Scrap tire, open burning	Tires in experimental burn hut		0.028 lb/ton tire	VOST samples burn rate = 2.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Benzodiazine			Scrap tire, open burning	Tires in experimental burn hut		0.020 lb/ton tire	VOST samples burn rate = 4.63 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Benzofuran	271896		Scrap tire, open burning	Tires in experimental burn hut		0.137 lb/ton tire	VOST samples burn rate = 3.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Benzofuran	271896		Scrap tire, open burning	Tires in experimental burn hut		0.044 lb/ton tire	VOST samples burn rate = 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Benzofuran	271896		Scrap tire, open burning	Tires in experimental burn hut		0.104 lb/ton tire	VOST samples burn rate = 4.63 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Benzo(ghi)perylene	191242		Scrap tire, open burning	Tires in experimental burn hut		0.353 lb/ton tire	Sum of PAH analysis liq extract. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.3 kg/hr, controlled	212
Benzo(ghi)perylene	191242		Scrap tire, open burning	Tires in experimental burn hut		0.284 lb/ton tire	Sum of PAH analysis liq extract. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.1 kg/hr, controlled	212
Benzo(ghi)perylene	191242		Scrap tire, open burning	Tires in experimental burn hut		0.207 lb/ton tire	Sum of PAH analysis liq extract. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.7 kg/hr, controlled	212
Benzo(ghi)perylene	191242		Scrap tire, open burning	Tires in experimental burn hut		0.056 lb/ton tire	Sum of PAH analysis liq extract. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=2.3 kg/hr, controlled	212
Benzoic acid	65850	226	Woven fabric finishing	Curing oven - resin finish	330001	0.26 lb/ton fabric	Uncontrolled, one test	52
Benzoic acid	65850	226	Woven fabric finishing	Tenter frames - resin finish	330001	0.0142 lb/ton fabric	Uncontrolled, test data	52
Benzoic acid	65850	2865	Phthalic anhydride production - naphthalene process	Main process incinerator	301019	3.12 lb/ton PA produced	Uncontrolled, test data and engineering judgement	120

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Benzoic acid	65850	2865	Phthalic anhydride production - naphthalene process	Main process incinerator	301019	0.1 lb/ton PA produced	Controlled, test data and engineering judgement	120
Benzoic acid	65850	2865	Phthalic anhydride production - xylene process	Main process incinerator	301019	0.218 lb/ton PA produced	Controlled, based on test data	120
Benzoic acid	65850	2865	Phthalic anhydride production - xylene process	Main process incinerator	301019	4.24 lb/ton PA produced	Uncontrolled, based on test data and engineering judgement	120
Benzoic acid	65850	2865	Phthalic anhydride production - xylene process	Secondary incinerator	301019	0.025 lb/ton PA produced	Controlled, test data and engineering judgement	120
Benzoic acid	65850	2865	Phthalic anhydride production - xylene process	Secondary incinerator	301019	2.5 lb/ton PA produced	Uncontrolled, based on test data and engineering judgement	120
Benzoic acid, butyl ester	136607	226	Woven fabric finishing	Curing oven - resin finish	330001	1.2 lb/ton fabric	Uncontrolled, average of three tests	52
Benzo(k)fluoranthene	207089		Scrap tire, open burning	Tires in experimentl burn hut		0.219 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter compnt, shred condition = 2" by 2" piece, burn rate=1.3 kg/hr, controlled	212
Benzo(k)fluoranthene	207089		Scrap tire, open burning	Tires in experimental burn hut		0.178 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter compnt, shred condition = 2" by 2" piece, burn rate=1.1 kg/hr, controlled	212
Benzo(k)fluoranthene	207089		Scrap tire, open burning	Tires in experimental burn hut		0.210 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter compnt, shred condition = 2" by 2" piece, burn rate=1.7 kg/hr, controlled	212
Benzo(k)fluoranthene	207089		Scrap tire, open burning	Tires in experimental burn hut		0.086 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter compnt, shred condition = 2" by 2" piece, burn rate=2.3 kg/hr, controlled	212
Benzo(k)fluoranthene	207089	25	Wood combustion, industrial	Balanced draft witbe stoker-fired industrial boiler	10200906	4.4 x 10E-6 lb/ton fuel	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 kg/s, boil. eff. 55.3%	177
Benzothiophene	95158		Scrap tire, open burning	Tires in experimental burn hut		0.044 lb/ton tire	VOST samples burn rate = 1.5 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Benzothiophene	95158		Scrap tire, open burning	Tires in experimental burn hut		0.035 lb/ton tire	VOST samples burn rate = 2.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Benzothiophene	95158		Scrap tire, open burning	Tires in experimental burn hut		0.022 lb/ton tire	VOST samples burn rate = 1.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Benzothiophene	95158		Scrap tire, open burning	Tires in experimental burn hut		0.055 lb/ton tire	VOST samples burn rate = 1.4 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Benzothiophene	95158		Scrap tire, open burning	Tires in experimental burn hut		0.144 lb/ton tire	VOST samples burn rate = 0.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Benzothiophene	95158		Scrap tire, open burning	Tires in experimental burn hut		0.073 lb/ton tire	VOST samples burn rate = 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Benzothiophene	95158		Scrap tire, open burning	Tires in experimental burn hut		0.037 lb/ton tire	VOST samples burn rate = 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Benzothiophene	95158		Scrap tire, open burning	Tires in experimental burn hut		0.033 lb/ton tire	VOST samples burn rate = 2.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Beryllium	7440417		Coal combustion	Anthracite coal-fired cyclone boilers, util/commerc/industr	1	<50 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Beryllium	7440417		Coal combustion	Anthracite coal-fired cyclone boilers, util/commerc/industr	1	<32 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Beryllium	7440417		Coal combustion	Anthracite coal-fired cyclone boilers, util/commerc/industr	1	0.32 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Beryllium	7440417		Coal combustion	Anthracite coal-fired pulverized (wet/dry bot.) boilers, util/comm/ind	1	50 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Beryllium	7440417		Coal combustion	Anthracite coal-fired pulverized (wet/dry bot.) boilers, util/comm/ind	1	32 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Beryllium	7440417		Coal combustion	Anthracite coal-fired pulverized (wet/dry bot.) boilers, util/comm/ind	1	1.8 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Beryllium	7440417		Coal combustion	Anthracite coal-fired pulverized (wet/dry bot.) boilers, util/comm/ind	1	0.07 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Beryllium	7440417		Coal combustion	Anthracite coal-fired stoker boilers, util/commerc/industr	1	45 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Beryllium	7440417		Coal combustion	Anthracite coal-fired stoker boilers, util/commerc/industr	1	6-28 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Beryllium	7440417		Coal combustion	Anthracite coal-fired stoker boilers, util/comm/indust	1	3.6 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Beryllium	7440417		Coal combustion	Bituminous coal-fired cyclone boiler, util/comm/indust	1	<81 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Beryllium	7440417		Coal combustion	Bituminous coal-fired cyclone boiler, util/comm/indust	1	<52 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Beryllium	7440417		Coal combustion	Bituminous coal-fired cyclone boiler, util/comm/indust	1	0.52 lb/10E12 Btu	Controlled with ESP, based on source tests	36
Beryllium	7440417		Coal combustion	Bituminous coal-fired pulverized (dry/wet bot.) boilers, util/comm/ind	1	81 lb/10E12 Btu	Uncontrolled, based on source tests for dry bottom boilers	36
Beryllium	7440417		Coal combustion	Bituminous coal-fired pulverized (dry/wet bot.) boilers, util/comm/ind	1	52 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Beryllium	7440417		Coal combustion	Bituminous coal-fired pulverized (dry/wet bot.) boilers, util/comm/ind	1	3.0 lb/10E12 Btu	Controlled with ESP, based on source tests	36
Beryllium	7440417		Coal combustion	Bituminous coal-fired pulverized (dry/wet bot.) boilers, util/comm/ind	1	0.11 lb/10E12 Btu	Controlled with scrubber, based on one source test	36
Beryllium	7440417		Coal combustion	Bituminous coal-fired spreader stoker boilers, util/comm/industr	1	73 lb/10E12 Btu	Uncontrolled, based on source tests	36
Beryllium	7440417		Coal combustion	Bituminous coal-fired spreader stoker boilers, util/comm/industr	1	9.8-46 lb/10E12 Btu	Controlled with multiclone, based on source tests and engineering judgement	36
Beryllium	7440417		Coal combustion	Bituminous coal-fired spreader stoker boilers, util/comm/industr	1	5.9 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Beryllium	7440417		Coal combustion	Lignite coal-fired cyclone boilers, util/comm/industr	1	<130 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Beryllium	7440417		Coal combustion	Lignite coal-fired cyclone boilers, util/comm/industr	1	<84 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Beryllium	7440417		Coal combustion	Lignite coal-fired cyclone boilers, util/comm/ind/industr	1	0.84 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Beryllium	7440417		Coal combustion	Lignite coal-fired pulverized (dry/wet bottom) boilers, util/comm/ind	1	131 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Beryllium	7440417		Coal combustion	Lignite coal-fired pulverized (dry/wet bottom) boilers, util/comm/ind	1	84 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Beryllium	7440417		Coal combustion	Lignite coal-fired pulverized (dry/wet bottom) boilers, util/comm/ind	1	4.9 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Beryllium	7440417		Coal combustion	Lignite coal-fired pulverized (dry/wet bottom) boilers, util/comm/ind	1	0.18 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Beryllium	7440417		Coal combustion	Lignite coal-fired spreader stoker boilers, util/comm/industr	1	118 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Beryllium	7440417		Coal combustion	Lignite coal-fired spreader stoker boilers, util/comm/industr	1	16-74 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Beryllium	7440417		Coal combustion	Lignite coal-fired spreader stoker boilers, util/comm/industr	1	9.5 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Beryllium	7440417		Coal combustion, residential	Anthracite coal-fired boilers		10.4 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	36
Beryllium	7440417		Coal combustion, residential	Bituminous coal-fired boilers		17.0 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	36
Beryllium	7440417		Coal combustion, residential	Boilers fired by coal from appalachian region		19.5 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Beryllium	7440417		Coal combustion, residential	Boilers fired by coal from interior region		20.9 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Beryllium	7440417		Coal combustion, residential	Boilers fired by coal from northern plains region		13.6 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36

EMPIRE

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Beryllium	7440417		Coal combustion, residential	Boilers fired by coal from rocky mountain region		15.2 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Beryllium	7440417		Coal combustion, residential	Lignite coal-fired boilers		27.5 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	34
Beryllium	7440417		Coal combustion, residential	Subbituminous coal-fired boilers		13.6 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	34
Beryllium	7440417		Internal combustion engines - stationary	Reciprocating engine - distillate oil fuel		0.069 lb/10E12 Btu	Uncontrolled emissions	213
Beryllium	7440417		Internal combustion engines - stationary	Gas turbine - distillate oil fuel		0.324 lb/10E12 Btu	Uncontrolled emissions	213
Beryllium	7440417		Oil combustion	Distillate oil-fired boiler, util/comm/industr/residential	1	2.5 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Beryllium	7440417		Oil combustion	Distillate oil-fired boiler, util/comm/industr/residential	1	1.58 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Beryllium	7440417		Oil combustion	Distillate oil-fired boiler, util/comm/industr/residential	1	0.35 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Beryllium	7440417		Oil combustion	Distillate oil-fired boiler, util/comm/industr/residential	1	0.15 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	34
Beryllium	7440417		Oil combustion	Residual oil-fired boiler, util/comm/industr/residential	1	4.2 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Beryllium	7440417		Oil combustion	Residual oil-fired boiler, util/comm/industr/residential	1	2.65 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Beryllium	7440417		Oil combustion	Residual oil-fired boiler, util/comm/industr/residential	1	0.59 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Beryllium	7440417		Oil combustion	Residual oil-fired boiler, util/commerc/industr/residential	1	0.28 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	34
Beryllium	7440417		Wood combustion, residential	Woodstove without baffle		2.8 x 10E-7 lb/ton wood	Uncontrolled, based on one study, nonbaffled stove burning green pine	98
Beryllium	7440417	1099	Beryl ore mining	Entire process	305	0.2 lb/ton ore mined	Engineering judgement	113
Beryllium	7440417	226	Woven fabric finishing	Curing oven - resin finish	330001	8.6 x 10E-6 lb/ton fabric	Uncontrolled, one test	92
Beryllium	7440417	226	Woven fabric finishing	Heat setting	330001	1.3 x 10E-5 lb/ton fabric	Uncontrolled, based on test data	92
Beryllium	7440417	226	Woven fabric finishing	Tenter frames - resin finishing	330001	1.92 x 10E-5 lb/ton fabric	Uncontrolled, one test	92
Beryllium	7440417	226	Woven fabric finishing	Thermosol dyeing	330001	3.8 x 10E-7 lb/ton fabric	Uncontrolled, one test	92
Beryllium	7440417	2951	Asphaltic concrete production	Plant stack	305002	2.50 x 10E-11 lb/ton concrete	Uncontrolled from a single plant, avg. of 2 values, range is 2.1 - 2.9 x 10E-11 lb/ton	170
Beryllium	7440417	2951	Asphaltic concrete production	Plant stack	305002	1.98 x 10E-12 lb/ton concrete	Controlled (unspecified) from a single plant	170
Beryllium	7440417	3241	Cement manufacture - dry process	Entire process	305006	3 x 10E-8 lb/ton produced	Engineering judgement	113
Beryllium	7440417	3241	Cement manufacture - wet process	Clinker cooler	30500714	0.0008 lb/ton produced	ESP control	113
Beryllium	7440417	3241	Cement manufacture - wet process	Clinker cooler	30500714	0.0009 lb/ton produced	Baghouse control	113
Beryllium	7440417	3241	Cement manufacture - wet process	Kiln	30500706	0.002 lb/ton produced	Engineering judgement	113
Beryllium	7440417	3313	Ferroalloy production	Electric arc furnace, open, ferromanganese	30300702	5.5 x 10E-6 lb/mw-hr energy consumed by furnace	Uncontrolled	169
Beryllium	7440417	3313	Ferroalloy production	Electric arc furnace, sealed, silicomanganese	30300702	3.7 x 10E-8 lb/mw-hr energy consumed by furnace	Controlled, venturi scrubber	169
Beryllium	7440417	3313	Ferroalloy production	Electric arc furnace, semi-sealed, ferrosilicon	30300702	2.8 x 10E-6 lb/mw-hr energy consumed by furnace	Uncontrolled	169
Beryllium	7440417	347	Beryllium metal fabrication	Entire process	309	0.1 lb/ton Be processed	Engineering judgement, controlled	113

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Beryllium	7440417	36	Beryllium alloy - production	Melting	303	0.01 lb/ton alloy produced	Uncontrolled	113
Beryllium	7440417	36	Beryllium alloy - production	Melting	303	0.0004 lb/ton alloy produced	Baghouse	113
Beryllium	7440417	36	Beryllium alloy - stamping/drawing	Entire process	303	0.1 lb/ton Be processed	Engineering Judgement	113
Beryllium	7440417	36	Ceramics	Entire process		1 lb/ton Be processed	Engineering Judgement, controlled	113
Beryllium	7440417	4953	Municipal waste combustion	Mass burn, refractory facility	501001	0.0238 lb/ton controlled particulate emissions	Controlled by ESP, based on source test	110
Beryllium	7440417	4953	Municipal waste combustion	Mass burn, water wall incinerator	501001	1.82 x 10E-4 lb/ton controlled particulate	Controlled by ESP, based on source tests	110
Beryllium	7440417	4953	Municipal waste combustion	Modular incinerator	501001	7.2 x 10E-5 lb/ton controlled particulate emissions	Controlled by ESP, based on source test	110
Beryllium	7440417	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	0.13 lb/ton controlled particulate emissions	Controlled by ESP, based on source test	110
Beryllium	7440417	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	0.0001 lb/ton RDF combusted	100% RDF fuel only, ESP control only, overall average of several source averages, range is 9.6 x 10E-7 - 0.0002 lb/ton	180
Beryllium	7440417	4953	Municipal waste combustion	Modular starved-air combustor	501001	6.4 x 10E-7 lb/ton feed	ESP control only, overall average of several source averages, range is 4.4 x 10E-7 - 8.2 10E-7 lb/ton	180
Beryllium	7440417	4953	Municipal waste combustion	Modular starved-air combustor	501001	2.6 x 10E-6 lb/ton feed	Uncontrolled, overall average of several source averages, range is 8.6 x 10E-7 - 3.6 x 10E-6 lb/ton	180
Beryllium	7440417	4953	Municipal waste combustion	Modular excess-air combustor	501001	1.9 x 10E-5 lb/ton feed	ESP control only, detection limit reported, overall ave., range is 4.2 x 10E-6 - 3.4 x 10E-5 lb/ton	180
Beryllium	7440417	4953	Municipal waste combustion	Mass burn, water wall incinerator	501001	4.8 x 10E-5 lb/ton feed	Uncontrolled, one data point only	180
Beryllium	7440417	4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	1.24 x 10E-7 lb/ton feed	Capacity > 400 tons/day, ESP control only, one data point only	180
Beryllium	7440417	4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	4 x 10E-6 lb/ton feed	Capacity > 400 tons/day, spray drying after acid gas and PM control, det.limit, overall ave., range is 3.8 x 10E-6 - 4 x 10E-6 lb/ton	180
Beryllium	7440417	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	2.4 x 10E-8 lb/ton feed	Capacity < 400 tons/day, ESP control only, one data point only	180

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Beryllium	7440417	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	1.3 x 10E-8 lb/ton feed	Capacity < 400 tons/day, spray drying after acid gas and PM control, overall average of several source averages	180
Beryllium	7440417	4953	Municipal waste combustion	Mass burn waterwall combustor, built before 1980	501001	4.8 x 10E-7 lb/ton feed	Uncontrolled, one data point only	180
Beryllium	7440417	4953	Municipal waste combustion	Mass burn waterwall combustor, built before 1980	501001	3.4 x 10E-7 lb/ton feed	ESP control only, overall average of several source averages, range is 1.8 x 10E-7 - 4.8 x 10E-7	180
Beryllium	7440417	4953	Municipal waste combustion	Mass burn, refractory facility	501001	1.4 x 10E-6 lb/ton feed	Spray drying after acid gas and PM control, one data point only	180
Beryllium	7440417	4953	Municipal waste combustion	Mass burn, refractory facility	501001	3.4 x 10E-6 lb/ton feed	ESP control only, overall average of several source averages, range is 1.8 x 10E-6 - 8 x 10E-6	180
Beryllium	7440417	4953	Municipal waste combustion	Mass burn, refractory facility	501001	.0003 lb/ton feed	Uncontrolled, one data point only	180
Beryllium	7440417	4953	Sewage sludge incineration	Fluidized-bed furnace	50100506	<2 x 10E-4 lb/ton dry sludge	One test, scrubber	101
Beryllium	7440417	4953	Sewage sludge incineration	Multiple hearth furnace	50100504	<2 x 10E-6 lb/ton dry sludge	Average of two tests, scrubber	101
Bibenzyl	103297	226	Woven fabric finishing	Curing oven - resin finish	330001	0.0062 lb/ton fabric	Uncontrolled, one test	92
Bibenzyl	103297	226	Woven fabric finishing	Tenter frames - resin finish	330001	0.0028 lb/ton fabric	Uncontrolled, one test	92
Biphenyl	92524		Scrap tire, open burning	Tires in experimental burn hut		0.653 lb/ton tire	IAD-2 extracts w/MS analysis, shred condition = 3" by 3" pieces, burn rate = 1.3 kg/hr, uncontrolled	212
Biphenyl	92524		Scrap tire, open burning	Tires in experimental burn hut		0.667 lb/ton tire	IAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr, uncontrolled	212
Biphenyl	92524		Scrap tire, open burning	Tires in experimental burn hut		0.495 lb/ton tire	IAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 1.7 kg/hr, uncontrolled	212
Biphenyl	92524		Scrap tire, open burning	Tires in experimental burn hut		0.147 lb/ton tire	IAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 2.3 kg/hr, uncontrolled	212
Biphenyl	92524	226	Woven fabric finishing	Curing oven - resin finish	330001	0.0044 lb/ton fabric	Uncontrolled, average of three tests	92
Biphenyl	92524	226	Woven fabric finishing	Tenter frames - resin finish	330001	0.1 lb/ton fabric	Uncontrolled, test data	92

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Biphenyl	92524	226	Woven fabric finishing	Thermosol dyeing	330001	0.0044 lb/ton fabric	Uncontrolled, average of two tests	92
Biphenyl	92524	2911	Petroleum refinery	Fluidized catalytic cracking unit, fugitives	306	0.006 lb/hr	Based on weighted emission stream content	92
Boron	7440428		Wood combustion, residential	Woodstove without baffle		0.00146 lb/ton wood	Uncontrolled, based on one study, nonbaffled stove burning green pine	98
Boron	7440428	226	Woven fabric finishing	Curing oven - resin finish	330001	7.4 x 10E-5 lb/ton fabric	Uncontrolled, average of three tests	92
Boron	7440428	226	Woven fabric finishing	Heat setting	330001	5 x 10E-6 lb/ton fabric	Uncontrolled, based on test data	92
Boron	7440428	226	Woven fabric finishing	Tenter frames - resin finishing	330001	1.8 x 10E-4 lb/ton fabric	Uncontrolled, average of four tests	92
Boron	7440428	226	Woven fabric finishing	Thermosol dyeing	330001	1.84 x 10E-4 lb/ton fabric	Uncontrolled, average of three tests	92
4-Bromochlorobenzene	106398	226	Woven fabric finishing	Thermosol dyeing	330001	2.6 x 10E-4 lb/ton fabric	Uncontrolled, average of two tests	92
Bromodichloroethane	75274	4953	Sewage sludge incineration	Multiple hearth furnace	50100506	0.003 lb/ton dry sludge	One test, scrubber	101
2-Bromo-4,6-dinitroaniline	1817738	226	Woven fabric finishing	Thermosol dyeing	330001	0.0024 lb/ton fabric	Uncontrolled, one test	92
1-Bromo-2,4-dinitrobenzene	584485	226	Woven fabric finishing	Curing oven - resin finish	330001	0.0114 lb/ton fabric	Uncontrolled, average of two tests	92
1-Bromo-2,4-dinitrobenzene	584485	226	Woven fabric finishing	Tenter frames - resin finish	330001	0.042 lb/ton fabric	Uncontrolled	92
1-Bromo-2,4-dinitrobenzene	584485	226	Woven fabric finishing	Thermosol dyeing	330001	0.0066 lb/ton fabric	Uncontrolled, average of three tests	92
1,3-Butadiene	106990		Scrap tire, open burning	Tires in experimental burn hut		0.209 lb/ton tire	VOST samples burn rate = 1.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
1,3-Butadiene	106990		Scrap tire, open burning	Tires in experimental burn hut		0.077 lb/ton tire	VOST samples burn rate = 2.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
1,3-Butadiene	106990		Scrap tire, open burning	Tires in experimental burn hut		0.740 lb/ton tire	VOST samples burn rate = 0.9 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
1,3-Butadiene	106990		Scrap tire, open burning	Tires in experimental burn hut		0.421 lb/ton tire	VOST samples burn rate = 1.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
1,3-Butadiene	106990		Scrap tire, open burning	Tires in experimental burn hut		0.409 lb/ton tire	VOST samples burn rate = 1.4 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
1,3-Butadiene	106990		Scrap tire, open burning	Tires in experimental burn hut		2.550 lb/ton tire	VOST samples burn rate = 0.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
1,3-Butadiene	106990		Scrap tire, open burning	Tires in experimental burn hut		0.352 lb/ton tire	VOST samples burn rate = 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
1,3-Butadiene	106990		Scrap tire, open burning	Tires in experimental burn hut		0.157 lb/ton tire	VOST samples burn rate = 3.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
1,3-Butadiene	106990		Scrap tire, open burning	Tires in experimental burn hut		0.370 lb/ton tire	VOST samples burn rate = 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
1,3-Butadiene	106990		Scrap tire, open burning	Tires in experimental burn hut		0.118 lb/ton tire	VOST samples burn rate = 2.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
1,3-Butadiene	106990		Scrap tire, open burning	Tires in experimental burn hut		0.083 lb/ton tire	VOST samples burn rate = 6.43 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
1,3-Butadiene	106990	2399	Fabric production-dodecanedioic acid intermediate	Equipment leak		8.73 tons/yr	Controlled (unspecified), and uncontrolled, based on one plant's data	144
1,3-Butadiene	106990	2493	Waferboard manufacture	Press operation	307007	0.47 lb/msf of waferboard produced	Average emission factor for three different resin systems	207
1,3-Butadiene	106990	28	Industrial wastewater treatment	Weir	301	0.29 x mass of pollutant in waste stream	Uncontrolled emissions	208
1,3-Butadiene	106990	28	Industrial wastewater treatment	Oil-water separator	301	1.0 x mass of pollutant in waste stream	Uncontrolled emissions	208
1,3-Butadiene	106990	28	Industrial wastewater treatment	Treatment tank	301	0.01 x mass of pollutant in waste stream	Uncontrolled emissions	208
1,3-Butadiene	106990	28	Industrial wastewater treatment	Treatment tank	301	0.22 x mass of pollutant in waste stream	Uncontrolled emissions	208
1,3-Butadiene	106990	28	Industrial wastewater treatment	Aerated biobasin	301	0.29 x mass of pollutant in waste stream	Uncontrolled emissions	208
1,3-Butadiene	106990	28	Industrial wastewater treatment	Clarifier	301	0.028 x mass of pollutant in waste stream	Uncontrolled emissions	208
1,3-Butadiene	106990	28	Industrial wastewater treatment	Aerated equalization basin	301	1.0 x mass of pollutant in waste stream	Uncontrolled emissions	208
1,3-Butadiene	106990	28	Industrial wastewater treatment	Non-aerated equalization basin	301	0.43 x mass of pollutant in waste stream	Uncontrolled emissions	208
1,3-Butadiene	106990	28	Industrial wastewater treatment	Open trench	301	0.01? x mass of pollutant in waste stream	Uncontrolled emissions	208

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
1,3-Butadiene	106990	28	Industrial wastewater treatment	Sump	301	8.6e 10E-03 x mass of pollutant in waste stream	Uncontrolled emissions	208
1,3-Butadiene	106990	28	Industrial wastewater treatment	Lift station	301	0.34 x mass of pollutant in waste stream	Uncontrolled emissions	208
1,3-Butadiene	106990	28	Industrial wastewater treatment	Junction box	301	0.12 x mass of pollutant in waste stream	Uncontrolled emissions	208
1,3-Butadiene	106990	28	Industrial wastewater treatment	Manhole	301	0.15 x mass of pollutant in waste stream	Uncontrolled emissions	208
1,3-Butadiene	106990	28	Industrial wastewater treatment	Drain	301	0.57 x mass of pollutant in waste stream	Uncontrolled emissions	208
1,3-Butadiene	106990	28	Tetrahydrophthalic anhydride/acid production	Equipment leak		2.4 tons/yr	Controlled (unspecified), and uncontrolled, based on one plant's data	166
1,3-Butadiene	106990	28	Tetrahydrophthalic anhydride/acid production	Equipment leak		8.2 tons/yr	Controlled (unspecified), and uncontrolled, based on one plant's data	166
1,3-Butadiene	106990	282	Butadiene-vinylpyridine latex production	Equipment leak		0.41 tons/yr	Controlled (unspecified) based on one plant's data	166
1,3-Butadiene	106990	2821	Acrylonitrile-butadiene-styrene copolymer production	Equipment leak	30115380	2.36 tons/yr	Uncontrolled, average emission factor based on 2 facilities	166
1,3-Butadiene	106990	2821	Acrylonitrile-butadiene-styrene copolymer production	Process vents	30115301	9.48 lb/ton ABS polymer produced	Uncontrolled, average emission factor based on 3 facilities	166
1,3-Butadiene	106990	2821	Acrylonitrile-butadiene-styrene copolymer production	Process vents	30115301	4.22 lb/ton ABS polymer produced	Controlled (unspecified), average emission factor based on 3 facilities	166
1,3-Butadiene	106990	2821	Methylmethacrylate-butadiene- styrene resin production	Equipment leak		12.4 tons/yr	Uncontrolled based on one plant's data	166
1,3-Butadiene	106990	2821	Methylmethacrylate-butadiene- styrene resin production	Equipment leak		10.7 tons/yr	Controlled (unspecified), based on the average of 2 facilities	166
1,3-Butadiene	106990	2821	Methylmethacrylate-butadiene- styrene resin production	Process vents		9.3 tons/yr	Uncontrolled based on one plant's data	166
1,3-Butadiene	106990	2821	Methylmethacrylate-butadiene- styrene resin production	Process vents		1.8 lb/ton MBS produced	Controlled (unspecified) based on one plant's	166

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
1,3-Butadiene	106990	2821	Polyvinyl chloride production	Suspension process, entire plant	30101801	4.2 x 10E-4 lb/ton PVC	Based on a model plant, 1978 data, 1.5 x 10E8 lb capacity, control status not certain	138
1,3-Butadiene	106990	2821	Styrene-butadiene copolymer production	Secondary source-other liquid waste	301018	0.02 lb/ton	Controlled (unspecified), average emission factor based on 5 facilities	144
1,3-Butadiene	106990	2821	Styrene-butadiene copolymer production	Secondary source-other liquid waste	301018	0.02 lb/ton	Controlled (unspecified), average emission factor based on 11 facilities	144
1,3-Butadiene	106990	2821	Styrene-butadiene copolymer production	Secondary source-other liquid waste	301018	0.300 lb/ton	Controlled (unspecified), average emission factor based on 10 facilities	144
1,3-Butadiene	106990	2821	Styrene-butadiene copolymer production	Equipment leak	301018	7.270 tons/yr	Uncontrolled, average emission factor based on 19 facilities	144
1,3-Butadiene	106990	2821	Styrene-butadiene copolymer production	Process vents	301018	7.10 lb/ton	Controlled (unspecified), average emission factor based on 10 facilities	144
1,3-Butadiene	106990	2821	Styrene-butadiene copolymer production	Process vents	301018	14.2 lb/ton	Uncontrolled, average emission factor based on 10 facilities	144
1,3-Butadiene	106990	2822	Neoprene manufacture	Dichlorobutene refining	301	3.12 lb/ton neoprene produced	Calculated from national emissions and national capacity, mostly controlled	78
1,3-Butadiene	106990	2822	Neoprene manufacture	Dichlorobutene synthesis	301	0.6 lb/ton neoprene produced	Calculated from national emissions and national capacity, mostly controlled	78
1,3-Butadiene	106990	2822	Neoprene manufacture	Equipment leak	301	2.2 lb/ton neoprene produced	Uncontrolled, calculated from national emissions and national capacity	78
1,3-Butadiene	106990	2822	Neoprene manufacture	Jet vent scrubber	301026	0.094 lb/ton neoprene produced	Engineering Judgement	123
1,3-Butadiene	106990	2822	Neoprene manufacture	Equipment leak	301018	2.954 tons/yr	Uncontrolled, average emission factor based on 2 facilities	144
1,3-Butadiene	106990	2822	Neoprene manufacture	Process vents	301018	2.226 tons/yr	Controlled (unspecified), average emission factor based on 2 facilities	144
1,3-Butadiene	106990	2822	Neoprene manufacture	Process vents	301018	12.280 lb/ton	Uncontrolled, average emission factor based on 2 facilities	144
1,3-Butadiene	106990	2822	Polybutadiene production	Equipment leak	301	2.6 lb/ton PBd produced	Uncontrolled, based on average of six plant's capacities and emissions	80
1,3-Butadiene	106990	2822	Polybutadiene production	Process vents	301	0.052 lb/ton PBd produced	Controlled (flare), calculated from average of four plants emissions and capacities	80
1,3-Butadiene	106990	2822	Polybutadiene production	Process vents	301	1.0 lb/ton PBd produced	Uncontrolled, based on one plant's emissions and capacity	80

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
1,3-Butadiene	106990	2822	Polybutadiene production	Wastewater emissions	301	0.6 lb/ton PBd produced	Uncontrolled, based on one plant's data	80
1,3-Butadiene	106990	2822	Polybutadiene production	Wastewater emissions	301	0.240 lb/ton PBd produced	Uncontrolled, average emission factor based on 3 facilities	166
1,3-Butadiene	106990	2822	Polybutadiene production	Process vents	301	8.960 lb/ton PBd produced	Uncontrolled, average emission factor based on 6 facilities	166
1,3-Butadiene	106990	2822	Polybutadiene production	Equipment leak	301	10.4 tons/yr	Uncontrolled, average emission factor based on 6 facilities	166
1,3-Butadiene	106990	2822	Polybutadiene production	Process vents	301	6.14 lb/ton	Controlled (unspecified), average emission factor based on 6 facilities	166
1,3-Butadiene	106990	2822	Styrene-butadiene rubber produc. by emulsion polymerization	Butadiene absorption	301026	0.2 lb/ton SBR produced	Uncontrolled, based on industry estimates	81
1,3-Butadiene	106990	2822	Styrene-butadiene rubber production	Equipment leak	301026	1.4 lb/ton SBR produced	Calculated from national emissions and capacity, uncontrolled	83
1,3-Butadiene	106990	2822	Styrene-butadiene rubber production	Process vents	301026	1.92 lb/ton SBR produced	Calculated from national emis. & national capacity, represents ave. of control. & uncontrol. sources	83
1,3-Butadiene	106990	2822	Styrene-butadiene rubber production	Wastewater emissions	301026	0.08 lb/ton SBR produced	Calculated from national emissions and capacity, uncontrolled	83
1,3-Butadiene	106990	2869	1,3-Butadiene production	Secondary sources (wastewater, etc.)	301153	0.936 lb/ton	Controlled (unspecific), average emission factor based on 6 facilities	166
1,3-Butadiene	106990	2869	1,3-Butadiene production	Equipment leak	301153	448 tons/yr	Average emission factor based on 9 facilities	166
1,3-Butadiene	106990	2869	1,3-Butadiene production	Process vents	301153	0.031 lb/ton	Controlled (unspecified), average emission factor based on 3 facilities	166
1,3-Butadiene	106990	2869	1,3-Butadiene production	Process vents	301153	0.465 lb/ton	Uncontrolled, average emission factor based on 3 facilities	166
1,3-Butadiene	106990	2869	1,3-Butadiene production	Process vents	30115301	43.2 lb/ton produced	Uncontrolled based on one plant's data	166
1,3-Butadiene	106990	2869	1,3-Butadiene production	Equipment leak		0.11 tons/yr	Controlled (unspecified), and uncontrolled, based on one plant's data	166
1,3-Butadiene	106990	2869	Adiponitrile production	Equipment leak	30125420	0.2 lb/ton ADN produced	Uncontrolled, based on emissions and capacities of two plants	82
1,3-Butadiene	106990	2869	Adiponitrile production	Process vents	30125415	0.10 lb/ton ADN produced	Controlled, based on emissions and capacities of two plants	82
1,3-Butadiene	106990	2869	Adiponitrile production	Wastewater and handling	301254	0.018 lb/ton ADN	Uncontrolled, based on emissions and capacities of two plants	82

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
1,3-Butadiene	106990	2869	Adiponitrile production	Secondary sources (wastewater, etc.)	30125420	0.020 lb/ton ADN produced	Uncontrolled, average emission factor based on 2 facilities	144
1,3-Butadiene	106990	2869	Adiponitrile production	Equipment leak	30125420	3.99 tons/yr	Uncontrolled, average emission factor based on 2 facilities	144
1,3-Butadiene	106990	2869	Adiponitrile production	Process vents	30125415	3.35 tons/yr	Uncontrolled, average emission factor based on 2 facilities	144
1,3-Butadiene	106990	2869	Adiponitrile production	Process vents	30125415	0.066 ton/yr ADN produced	Controlled (unspecified), average emission factor based on 2 facilities	144
1,3-Butadiene	106990	2869	Butadiene catrimer production	Process vents		440 lb/ton BFC produced	Controlled (unspecified), and uncontrolled, based on one plant's data	144
1,3-Butadiene	106990	2869	Butadiene production - recovery process	Equipment leak	30115380	2.4 lb/ton produced	Calculated from national emissions and capacities, average of uncontrolled and controlled plants	79
1,3-Butadiene	106990	2869	Butadiene production - recovery process	Process vents	301153	0.2 lb/ton produced	Calculated from national emissions and capacities, average of uncontrolled and controlled plants	79
1,3-Butadiene	106990	2869	Butadiene production - recovery process	Wastewater emissions	301153	0.6 lb/ton produced	Calculated from national emissions and capacities, average of uncontrolled and controlled plants	79
1,3-Butadiene	106990	2869	Tetrahydrobenzaldehyde production	Equipment leak		4.3 tons/yr	Controlled (unspecified) based on one plant's data	144
1,3-Butadiene	106990	2869	Tetrahydrobenzaldehyde production	Process vents		1.84 lb/ton THB produced	Uncontrolled based on one plant's data	144
1,3-Butadiene	106990	2869	Tetrahydrobenzaldehyde production	Process vents		0.030 lb/ton THB produced	Controlled (unspecified) based on one plant's data	144
1,3-Butadiene	106990	30	Nitrile elastomer production	Secondary sources (wastewater, etc.)	308006	0.010 lb/ton nitrile elastomer produced	Uncontrolled, average emission factor based on 3 facilities	144
1,3-Butadiene	106990	30	Nitrile elastomer production	Equipment leak	308006	8.741 tons/yr	Uncontrolled, average emission factor based on 3 facilities	144
1,3-Butadiene	106990	30	Nitrile elastomer production	Process vents	308006	16 lb/ton nitrile elastomer produced	Uncontrolled, average emission factor based on 6 facilities	144
1,3-Butadiene	106990	30	Nitrile elastomer production	Process vents	308006	4 lb/ton nitrile elastomer produced	Controlled (unspecified), average emission factor based on 6 facilities	144
1,3-Butadiene	106990	30	Synthetic rubber production	Equipment leak		99.30 tons/yr	Controlled (unspecified) based on one plant's	144
1,3-Butadiene	106990	30	Synthetic rubber production	Equipment leak		47.7 tons/yr	Uncontrolled based on one plant's data	144

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
1,3-Butadiene	106990	4953	Wastewater treatment	POTW	50100701	1700 lb/ton 1,3-butadiene in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	108
1,3-Butadiene	106990	5541	Gasoline marketing activities	Vehicle refueling, vapor loss	40600201	3.94 lb/gal of gas pumped	Listed as N-butane/1,3-butadiene emission rate	4
Butane	106978	2895	Carbon black manufacture - oil furnace	Main process purge vent	30100504	0.54 lb/ton carbon black produced	Based on test data	97
1-Butanol	71363	28	Industrial wastewater treatment	Weir	301	0.24 x mass of pollutant in waste stream	Uncontrolled emissions	206
1-Butanol	71363	28	Industrial wastewater treatment	Oil-water separator	301	6.9 x 10E-4 x mass of pollutant in waste stream	Uncontrolled emissions	206
1-Butanol	71363	28	Industrial wastewater treatment	Treatment tank	301	2.9 x 10E-3 x mass of pollutant in waste stream	Uncontrolled emissions	206
1-Butanol	71363	28	Industrial wastewater treatment	Non-aerated biobasin	301	0.30 x mass of pollutant in waste stream	Uncontrolled emissions	206
1-Butanol	71363	28	Industrial wastewater treatment	Aerated biobasin	301	0.041 x mass of pollutant in waste stream	Uncontrolled emissions	206
1-Butanol	71363	28	Industrial wastewater treatment	Clarifier	301	7.8 x 10E-3 x mass of pollutant in waste stream	Uncontrolled emissions	206
1-Butanol	71363	28	Industrial wastewater treatment	Aerated equalization basin	301	0.61 x mass of pollutant in waste stream	Uncontrolled emissions	206
1-Butanol	71363	28	Industrial wastewater treatment	Non-aerated equalization basin	301	0.18 x mass of pollutant in waste stream	Uncontrolled emissions	206
1-Butanol	71363	28	Industrial wastewater treatment	Open trench	301	4.1 x 10E-4 x mass of pollutant in waste stream	Uncontrolled emissions	206
1-Butanol	71363	28	Industrial wastewater treatment	Sump	301	2.1 x 10E-3 x mass of pollutant in waste stream	Uncontrolled emissions	206
1-Butanol	71363	28	Industrial wastewater treatment	Lift station	301	3.6 x 10E-3 x mass of pollutant in waste stream	Uncontrolled emissions	206
1-Butanol	71363	28	Industrial wastewater treatment	Junction box	301	1.9 x 10E-3 x mass of pollutant in waste stream	Uncontrolled emissions	206
1-Butanol	71363	28	Industrial wastewater treatment	Manhole	301	1.1 x 10E-5 x mass of pollutant in waste stream	Uncontrolled emissions	206
1-Butanol	71363	28	Industrial wastewater treatment	Drain	301	8.7 x 10E-5 x mass of pollutant in waste stream	Uncontrolled emissions	206

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
2-Butyl alcohol	78922	2869	Glycerin production - chlorination process	Catalyst prep vent - allyl alcohol step	30117610	148.8 lb/ton glycerin produced	Uncontrolled, assumed 33% VOC is butyl alcohol, test data and calculations	150
Butylbenzene	104518	2865	Acetone/phenol manufacture from cumene	Cumene peroxidation vent	30120202	0.0044 lb/ton phenol	Controlled (not specified), based on sampling, 1977 data, average factors	126
Butyraldehyde	123728		Wood combustion, residential	Fireplace		0.4 lb/ton wood burned	Uncontrolled, average emission factor based on source tests	58
Butyraldehyde	123728		Wood combustion, residential	Woodstove		0.94 lb/ton wood burned	Uncontrolled, average emission factor based on source tests	58
Butyraldehyde	123728	2951	Asphaltic concrete production	Plant stack	305002	0.0024 lb/ton concrete	Based on limited test data, cyclone/wet scrubber control	97
Cadmium	7440439		Coal combustion	Anthracite coal-fired cyclone boilers, util/commerc/industr	1	7.0 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Cadmium	7440439		Coal combustion	Anthracite coal-fired cyclone boilers, util/commerc/industr	1	5.0 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Cadmium	7440439		Coal combustion	Anthracite coal-fired overfeed stoker boiler, util/commerc/industr	1	11-20 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Cadmium	7440439		Coal combustion	Anthracite coal-fired overfeed stoker boiler, util/commerc/industr	1	7.5-14 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Cadmium	7440439		Coal combustion	Anthracite coal-fired overfeed stoker boiler, util/commerc/industr	1	2.7-5.2 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Cadmium	7440439		Coal combustion	Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	11 lb/10E12 Btu	Uncontrolled with ESP, calculated based on engineering judgement	36
Cadmium	7440439		Coal combustion	Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	7.9 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Cadmium	7440439		Coal combustion	Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	2.3 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Cadmium	7440439		Coal combustion	Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	0.09-0.40 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Cadmium	7440439		Coal combustion	Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	11-17 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Cadmium	7440439		Coal combustion	Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	8.0-12 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Cadmium	7440439		Coal combustion	Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	0.39 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Cadmium	7440439		Coal combustion	Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	0.32 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Cadmium	7440439		Coal combustion	Anthracite coal-fired spreader stoker boiler, util/commerc/industr	1	9.2-11 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Cadmium	7440439		Coal combustion	Anthracite coal-fired spreader stoker boiler, util/commerc/industr	1	1.6-7.5 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Cadmium	7440439		Coal combustion	Anthracite coal-fired spreader stoker boiler, util/commerc/industr	1	1.3-2.7 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Cadmium	7440439		Coal combustion	Bituminous coal-fired cyclone boiler, util/commerc/industr	1	28 lb/10E12 Btu	Uncontrolled, based on source test	34
Cadmium	7440439		Coal combustion	Bituminous coal-fired cyclone boiler, util/commerc/industr	1	20 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Cadmium	7440439		Coal combustion	Bituminous coal-fired cyclone boiler, util/commerc/industr	1	1.3 lb/10E12 Btu	Controlled with ESP, based on source tests	34
Cadmium	7440439		Coal combustion	Bituminous coal-fired overfeed stoker boiler, util/commerc/industr	1	43-82 lb/10E12 Btu	Uncontrolled, based on source tests	34
Cadmium	7440439		Coal combustion	Bituminous coal-fired overfeed stoker boiler, util/commerc/industr	1	30-58 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Cadmium	7440439		Coal combustion	Bituminous coal-fired overfeed stoker boiler, util/commerc/industr	1	11-21 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Cadmium	7440439		Coal combustion	Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	44.4 lb/10E12 Btu	Controlled, based on source tests	36
Cadmium	7440439		Coal combustion	Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	31.6 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Cadmium	7440439		Coal combustion	Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	9.0-20 lb/10E12 Btu	Controlled with ESP, based on source tests	36
Cadmium	7440439		Coal combustion	Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	0.35-1.6 lb/10E12 Btu	Controlled with scrubber, based on source tests	36
Cadmium	7440439		Coal combustion	Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	45-70 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Cadmium	7440439		Coal combustion	Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	32-50 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Cadmium	7440439		Coal combustion	Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	1.4 lb/10E12 Btu	Controlled with ESP, based on source tests	36
Cadmium	7440439		Coal combustion	Bituminous coal-fired spreader stoker boilers, util/commerc/industr	1	21-43 lb/10E12 Btu	Uncontrolled, based on source tests	36
Cadmium	7440439		Coal combustion	Bituminous coal-fired spreader stoker boilers, util/commerc/industr	1	6.6-30 lb/10E12 Btu	Controlled with multiclone, based on measured and calculated emission factors	36
Cadmium	7440439		Coal combustion	Bituminous coal-fired spreader stoker boilers, util/commerc/industr	1	5.3-11 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Cadmium	7440439		Coal combustion	Lignite coal-fired cyclone boilers, util/commerc/industr	1	31 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Cadmium	7440439		Coal combustion	Lignite coal-fired cyclone boilers, util/commerc/industr	1	22 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Cadmium	7440439		Coal combustion	Lignite coal-fired cyclone boilers, util/commerc/industr	1	1.4 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Cadmium	7440439		Coal combustion	Lignite coal-fired overfeed stoker boiler, util/commerc/industr	1	47-90 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Cadmium	7440439		Coal combustion	Lignite coal-fired overfeed stoker boiler, util/commerc/industr	1	33-64 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Cadmium	7440439		Coal combustion	Lignite coal-fired overfeed stoker boiler, util/commerc/industr	1	12-23 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Cadmium	7440439		Coal combustion	Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	48.8 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Cadmium	7440439		Coal combustion	Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	34.8 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Cadmium	7440439		Coal combustion	Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	10 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Cadmium	7440439		Coal combustion	Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	0.38-1.8 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	34
Cadmium	7440439		Coal combustion	Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	49-77 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Cadmium	7440439		Coal combustion	Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	35-55 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Cadmium	7440439		Coal combustion	Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	1.5 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Cadmium	7440439		Coal combustion	Lignite coal-fired spreader stoker boilers, util/commerc/industr	1	23-47 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34

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POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Cadmium	7440439		Coal combustion	Lignite coal-fired spreader stoker boilers, util/commerc/industr	1	7.3-33 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Cadmium	7440439		Coal combustion	Lignite coal-fired spreader stoker boilers, util/commerc/industr	1	5.8-12 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Cadmium	7440439		Coal combustion, industrial	Pulverized stoker watertube boiler	10200202	0.00046 lbs/10E6 BTU heat input	Uncontrolled emissions	189
Cadmium	7440439		Coal combustion, industrial	Underfeed stoker watertube boiler	10200204	0.00046 lbs/10E6 BTU heat input	Uncontrolled emissions	189
Cadmium	7440439		Coal combustion, industrial	Chaingrate stoker watertube boiler	102002	0.00046 lbs/10E6 BTU heat input	Uncontrolled emissions	189
Cadmium	7440439		Coal combustion, industrial	Spreader stoker watertube boiler	10200204	0.00046 lbs/10E6 BTU heat input	Uncontrolled emissions	189
Cadmium	7440439		Coal combustion, residential	Anthracite coal-fired boilers		13.0 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	34
Cadmium	7440439		Coal combustion, residential	Bituminous coal-fired boilers		52.2 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	34
Cadmium	7440439		Coal combustion, residential	Boilers fired by coal from appalachian region		8.4 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Cadmium	7440439		Coal combustion, residential	Boilers fired by coal from interior region		375 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Cadmium	7440439		Coal combustion, residential	Boilers fired by coal from northern plains region		24.9 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Cadmium	7440439		Coal combustion, residential	Lignite coal-fired boilers		97.3 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	34
Cadmium	7440439		Coal combustion, residential	Subbituminous coal-fired boilers		29.8 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	34
Cadmium	7440439		Oil combustion	Distillate oil-fired boiler, util/commerc/industr/residential	1	10.5 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Cadmium	7440439		Oil combustion	Distillate oil-fired boiler, util/commerc/industr/residential	1	7.45 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34

POLLUTANT	CAS NUMBER	EIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Cadmium	7440439		Oil combustion	Distillate oil-fired boiler, util/commerc/industr/residential	1	1.58 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Cadmium	7440439		Oil combustion	Distillate oil-fired boiler, util/commerc/industr/residential	1	0.63 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	34
Cadmium	7440439		Oil combustion	Residual oil-fired boiler, util/commerc/industr/residential	1	15.7 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Cadmium	7440439		Oil combustion	Residual oil-fired boiler, util/commerc/industr/residential	1	46.86 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Cadmium	7440439		Oil combustion	Residual oil-fired boiler, util/commerc/industr/residential	1	9.90 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Cadmium	7440439		Oil combustion	Residual oil-fired boiler, util/commerc/industr/residential	1	3.96 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	34
Cadmium	7440439		Sewage sludge incineration	Fluidized-bed furnace	501	0.000 - 0.0003 lbs/ton dry sludge	Controlled by wet scrubber	203
Cadmium	7440439		Sewage sludge incineration	Fluidized-bed furnace	501	0.0016 lbs/ton dry sludge	Uncontrolled emissions, single test	203
Cadmium	7440439		Sewage sludge incineration	Multiple hearth furnace	501	0.009 - 0.071 lbs/ton dry sludge	Uncontrolled emissions, average of 5 tests was 0.038 lbs/ton	203
Cadmium	7440439		Sewage sludge incineration	Multiple hearth furnace	501	0.0009 - 0.062 lbs/ton dry sludge	Controlled by wet scrubber, average of 10 tests was 0.012 lbs/ton	203
Cadmium	7440439		Vehicle tire wear	Tire		1.07 x10E-8 - 1.07 x10E-5 lb/mile driven	Based on three emission factors in the literature	41
Cadmium	7440439		Waste oil combustion	Waste oil-fired boilers (<150 million Btu/h) or space heaters	1	0.025 lb/1000 gal oil burned	Uncontrolled, based on emissions data and engineering judgement, variable	99
Cadmium	7440439		Wood combustion, residential	Woodstove without baffle		7.2 x 10E-5 lb/ton wood	Uncontrolled, based on one study, nonbaffled stove burning green pine	98

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Cadmium	7440439	0711	Fertilizer application	Application process	302	6 x 10E-3 lb/ton fertilizer applied	Engineering estimate, mass balance	38
Cadmium	7440439	0711	Fertilizer application, superphosphate fertilizer	Application process	302	2 x 10E-4 lb/ton fertilizer applied		38,41
Cadmium	7440439	0711	Fungicide application	Application process	302	1 x 10E-5 lb/gal fungicide applied	Engineering estimate, mass balance	38
Cadmium	7440439	0711	Fungicide application	Application process	302	1.669 x 10E-4 lb/gal fungicide applied		41
Cadmium	7440439	226	Woven fabric finishing	Curing oven - resin finish	330001	9.8 x 10E-5 lb/ton fabric	Uncontrolled, average of two tests	92
Cadmium	7440439	226	Woven fabric finishing	Heat setting	330001	9.2 x 10E-6 lb/ton fabric	Uncontrolled, based on test data	92
Cadmium	7440439	226	Woven fabric finishing	Tenter frames - resin finishing	330001	3.8 x 10E-5 lb/ton fabric	Uncontrolled, average of four tests	92
Cadmium	7440439	226	Woven fabric finishing	Thermosol dyeing	330001	3.4 x 10E-6 lb/ton fabric	Uncontrolled, average of three tests	92
Cadmium	7440439	2816	Cadmium pigments manufacture	Total plant emissions	301038	15 lb/ton Cd charged	Engineering estimate, mass balance, controlled with baghouse	38
Cadmium	7440439	2869	Plastic stabilizers manufacture	Total plant emissions		4 lb/ton Cd charged	Engineering estimate, controlled with baghouse	38
Cadmium	7440439	2951	Asphaltic concrete production	Plant stack	305002	2.46 x 10E-10 lb/ton concrete	Controlled (unspecified) from a single plant, avg. of 2 values, range is 9.24 x 10E-11 - 4.4 x 10E-10 lb/ton	170
Cadmium	7440439	2951	Asphaltic concrete production	Plant stack	305002	1.82 x 10E-10 lb/ton concrete	Uncontrolled from a single plant, avg. of 2 values, range is 1.81 x 10E-10 - 1.83 x 10E-10 lb/ton	170
Cadmium	7440439	3241	Cement manufacture - dry process	Finish mill	305006	1 x 10E-7 lb/ton feed	Controlled with baghouse	38
Cadmium	7440439	3241	Cement manufacture - dry process	Finish mill air separator	305006	2.4 x 10E-6 lb/ton feed	Controlled with baghouse, stack sampling	38
Cadmium	7440439	3241	Cement manufacture - dry process	Finish mill feed	305006	1 x 10E-4 lb/ton feed	Controlled with baghouse	38
Cadmium	7440439	3241	Cement manufacture - dry process	Kiln	30500606	3 x 10E-4 lb/ton feed	Controlled with a baghouse or ESP, stack sampling	38
Cadmium	7440439	3241	Cement manufacture - dry process	Raw mill	305006	2.7 x 10E-7 lb/ton feed	Controlled with baghouse	38
Cadmium	7440439	3241	Cement manufacture - dry process	Raw mill air separator	305006	8.5 x 10E-7 lb/ton feed	Controlled with baghouse	38

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Cadmium	7440439	3241	Cement manufacture - dry process	Raw mill feed	305006	3.6 x 10E-7 lb/ton feed	Controlled with baghouse	38
Cadmium	7440439	3241	Cement manufacture - wet process	Clinker cooler	305006	1 x 10E-5 lb/ton feed	Controlled with ESP or baghouse	38
Cadmium	7440439	3241	Cement manufacture - wet process	Kiln	305006	2 x 10E-5 lb/ton feed	Controlled with ESP	38
Cadmium	7440439	3241	Cement manufacture - wet process	Raw mill	305006	3 x 10E-5 lb/ton feed	Controlled with baghouse	38
Cadmium	7440439	331	Steel production	Open hearth furnace	303009	0.00028 lb/ton produced	Uncontrolled, calculated from data presented in the reference	45
Cadmium	7440439	331	Steel production	Open hearth furnace	303009	6.4 x 10E-6 lb/ton produced	Controlled with ESP, calculated from data presented in the reference	45
Cadmium	7440439	3313	Ferroalloy production	Electric arc furnace, open, ferromanganese	30300701	0.003 lb/mw-hr energy consumed by furnace	Uncontrolled	169
Cadmium	7440439	3313	Ferroalloy production	Electric arc furnace, semi-sealed, ferrosilicon	30300702	0.004 lb/mw-hr energy consumed by furnace	Uncontrolled	169
Cadmium	7440439	332	Iron and steel foundry	Green sand shakeout	304	2.652 x 10E-6 lb/ton metal cast	Uncontrolled, Cd dust less than 3 um size only	47
Cadmium	7440439	332	Secondary iron and steel production	Basic oxygen furnace	304	4.1 x 10E-5 lb/ton steel	Uncontrolled, based on Cd content in feed, fuel, or emissions	38
Cadmium	7440439	332	Secondary iron and steel production	Basic oxygen furnace	304	2.79 x 10E-5 lb/ton steel	Controlled with venturi scrubber or ESP	38
Cadmium	7440439	332	Secondary iron and steel production	Electric arc furnace	304	3.4 x 10E-3 lb/ton steel	Engineering estimate, stack test, concentration of Cd in fuel, feed, or emissions	38
Cadmium	7440439	332	Secondary iron and steel production	Open hearth furnace	304	5.78 x 10E-3 lb/ton steel	Uncontrolled, stack sampling	38
Cadmium	7440439	332	Secondary iron and steel production	Open hearth furnace	304	1.1 x 10E-4 lb/ton steel	Controlled with ESP, stack sampling	38
Cadmium	7440439	332	Secondary iron and steel production	Sintering operations, windbox exhaust	304	2 x 10E-3 lb/ton feed	Uncontrolled	38
Cadmium	7440439	332	Secondary iron and steel production	Sintering operations, windbox exhaust	304	9.5 x 10E-4 lb/ton feed	Controlled with roteclone and ESP	38
Cadmium	7440439	333	Primary zinc smelting	Coking	303030	2.24 lb/ton Zn thru	Engineering estimate	38
Cadmium	7440439	333	Primary zinc smelting	Electrothermic process	303030	1.2 x 10E-2 lb/ton Zn produced	Engineering estimate	38

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Cadmium	7440439	333	Primary zinc smelting	Horizontal retort	303030	6 x 10E-3 lb/ton Zn produced	Engineering estimate	38
Cadmium	7440439	333	Primary zinc smelting	Sintering with cyclone	303030	6.32 lb/ton Zn thru	Stack sampling	38
Cadmium	7440439	333	Primary zinc smelting	Sintering with cyclone and ESP	303030	2.16 lb/ton Zn thru	Stack sampling	38
Cadmium	7440439	333	Primary zinc smelting	Vertical retort	303030	6.9 x 10E-2 lb/ton Zn thru	Stack sampling	38
Cadmium	7440439	333	Primary zinc smelting	Zinc sinter plant	303030	3.32 lb/ton produced	Controlled with cyclone, calculated from data presented in the reference	45
Cadmium	7440439	333	Primary zinc smelting	Zinc sinter plant	303030	1.448 lb/ton produced	Controlled with cyclone and ESP, calculated from data presented in the reference	45
Cadmium	7440439	333	Primary zinc smelting	Zinc smelter coker	303030	0.364 lb/ton	No controls, calculated from data presented in the reference	45
Cadmium	7440439	333	Primary zinc smelting	Zinc vertical retort	303030	0.00268 lb/ton produced	No controls, calculated from data presented in the reference	45
Cadmium	7440439	333	Primary zinc/zinc oxide smelting	Calcine handling	303030	9.8 x 10E-8 lb/ton Zn produced	Controlled with baghouse, derived from emission factors	43
Cadmium	7440439	333	Primary zinc/zinc oxide smelting	Electrolyte cooler	303030	<2 lb/ton Zn produced	Controlled with demister, derived from emission factor	43
Cadmium	7440439	333	Primary zinc/zinc oxide smelting	Fume kiln	303030	0.0068 lb/ton ZnO produced	Controlled with baghouse, derived from emission factor	43
Cadmium	7440439	333	Primary zinc/zinc oxide smelting	Gypsum storage	303030	<2 lb/ton Zn produced	Uncontrolled, derived from emission factor	43
Cadmium	7440439	333	Primary zinc/zinc oxide smelting	Leach residue dryer	303030	4.48 x 10E-4 lb/ton Zn produced	Controlled with baghouse, derived from emission factors	43
Cadmium	7440439	333	Primary zinc/zinc oxide smelting	Nuisance dust collector	303030	<2 lb/ton Zn equivalent produced	Controlled with baghouse, derived from emission factor	43
Cadmium	7440439	333	Primary zinc/zinc oxide smelting	Raw material storage - baghouse	303030	2.4 x 10E-5 lb/ton Zn produced	Derived from emission factors	43
Cadmium	7440439	333	Primary zinc/zinc oxide smelting	Raw material storage - dry scrubber	303030	0.00016 lb/ton Zn equivalent produced	Derived from emission factors	43
Cadmium	7440439	333	Primary zinc/zinc oxide smelting	Raw material storage - uncontrolled	303030	0.001488 lb/ton Zn produced	Derived from emission factors	43
Cadmium	7440439	333	Primary zinc/zinc oxide smelting	Refining column	303030	<2 lb/ton Zn equivalent produced	Controlled with baghouse, derived from emission factors (n = 2)	43

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Cadmium	7440439	333	Primary zinc/zinc oxide smelting	Roadways	303030	4.9 x 10E-4 lb/ton Zn produced	Controlled, derived from emission factors (n = 3)	43
Cadmium	7440439	333	Primary zinc/zinc oxide smelting	Screening tower	303030	<2 lb/ton Zn produced	Controlled with baghouse, derived from emission factor	43
Cadmium	7440439	333	Primary zinc/zinc oxide smelting	Sinter machine	303030	0.02036 lb/ton Zn equivalent produced	Controlled with baghouse, derived from emission factors (n = 2)	43
Cadmium	7440439	333	Primary zinc/zinc oxide smelting	Sinter sizing/crushing	303030	0.00324 lb/ton Zn equivalent produced	Controlled with baghouse, derived from emission factor	43
Cadmium	7440439	333	Primary zinc/zinc oxide smelting	Waelz kiln fugitives	303030	<2 lb/ton ZnO produced	Controlled with baghouse, derived from emission factor	43
Cadmium	7440439	333	Primary zinc/zinc oxide smelting	Waelz kiln product	303030	6.6 x 10E-5 lb/ton ZnO produced	Controlled with baghouse, derived from emission factor	43
Cadmium	7440439	333	Primary zinc/zinc oxide smelting	Zinc holding furnace	303030	<2 lb/ton Zn equivalent produced	Controlled with baghouse, derived from emission factor	43
Cadmium	7440439	333	Primary zinc/zinc oxide smelting	Zinc ore dryer	303030	2.2 x 10E-5 lb/ton Zn equivalent prod	Controlled with wet scrubber, derived from emission factor	43
Cadmium	7440439	333	Primary zinc/zinc oxide smelting	Zinc dust process	303030	<2 lb/ton Zn produced	Controlled with baghouse, derived from emission factors	43
Cadmium	7440439	333	Primary zinc/zinc oxide smelting	Zinc furnace preheaters	303030	0.00578 lb/ton Zn equivalent produced	Controlled with baghouse, derived from emission factor	43
Cadmium	7440439	333	Primary zinc/zinc oxide smelting	Zinc melting furnace - baghouse	303030	<2 lb/ton Zn produced	Derived from emission factors	43
Cadmium	7440439	333	Primary zinc/zinc oxide smelting	Zinc metal powder process	303030	<2 lb/ton Zn produced	Controlled with baghouse, derived from emission factors (n = 3)	43
Cadmium	7440439	333	Primary zinc/zinc oxide smelting	Zinc tapping/casting	303030	<2 lb/ton Zn equivalent produced	Uncontrolled, derived from emission factors	43
Cadmium	7440439	3339	Primary cadmium smelting	Cadmium casting furnace	303	<2 lb/ton Cd produced	Uncontrolled, derived from emission factor	43,44,46
Cadmium	7440439	3339	Primary cadmium smelting	Cadmium holding furnace	303	0.26 lb/ton Cd produced	Uncontrolled, derived from emission factor	43,44,46
Cadmium	7440439	3339	Primary cadmium smelting	Cadmium melting furnace	303	0.26 lb/ton Cd produced	Uncontrolled, derived from emission factor	43,44,46
Cadmium	7440439	3339	Primary cadmium smelting	Cadmium melting furnace	303	<2 lb/ton Cd produced	Controlled with baghouse, derived from emission factor	43,44,46
Cadmium	7440439	3339	Primary cadmium smelting	Cadmium melting/casting furnace	303	<2 lb/ton Cd produced	Controlled with wet scrubber, derived from emission factor	43,44,46
Cadmium	7440439	3339	Primary cadmium smelting	Cadmium oxide furnace	303	4.92 lb/ton Cd produced	Controlled with baghouse, derived from emission factor	43,44,46

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Cadmium	7440439	3339	Primary cadmium smelting	Cadmium tapping/casting	303	<2 lb/ton Cd produced	Uncontrolled, derived from emission factor	43,44,46
Cadmium	7440439	3339	Primary cadmium smelting	Casting/holding furnace	303	0.00754 lb/ton Cd produced	Uncontrolled, derived from emission factor	43,44,46
Cadmium	7440439	3339	Primary cadmium smelting	Cd baghouse	303	0.036 lb/ton Cd produced	Derived from emission factors (n = 2)	43,44,46
Cadmium	7440439	3339	Primary cadmium smelting	Cd metal powder packaging	303	0.06 lb/ton Cd produced	Controlled with baghouse, derived from one emission factor	43,44,46
Cadmium	7440439	3339	Primary cadmium smelting	Dust charging	303	0.28 lb/ton Cd produced	Uncontrolled, derived from emission factor	43,44,46
Cadmium	7440439	3339	Primary cadmium smelting	Fugitives packing dust collector	303	0.388 lb/ton Cd produced	Controlled, derived from two emission factors	43,44,46
Cadmium	7440439	3339	Primary cadmium smelting	Gypsum storage piles	303	<2 lb/ton Cd produced	Controlled with dry scrubber, derived from one emission factor	43,44,46
Cadmium	7440439	3339	Primary cadmium smelting	Prewelt department	303	2.66 lb/ton Cd produced	Uncontrolled, derived from emission factor	43,44,46
Cadmium	7440439	3339	Primary cadmium smelting	Purification department stack	303	0.01506 lb/ton Cd produced	Uncontrolled, derived from one emission factor	43,44,46
Cadmium	7440439	3339	Primary cadmium smelting	Purification sponge tank	303	0.00754 lb/ton Cd produced	Uncontrolled, derived from one emission factor	43,44,46
Cadmium	7440439	3339	Primary cadmium smelting	Solutions heating tank	303	0.764 lb/ton Cd produced	Uncontrolled, derived from one emission factor	43,44,46
Cadmium	7440439	3339	Primary lead smelting	Baghouse for sinter crushing and returns	303010	0.000204 lb/ton Pb produced	Derived from one emission estimate	44,46,97
Cadmium	7440439	3339	Primary lead smelting	Blast furnace	30301002	46.94 lb/ton Pb produced	Uncontrolled, derived from one emission factor	46,97
Cadmium	7440439	3339	Primary lead smelting	Blast furnace	303010	5.29 x 10E-3 lb/ton Pb	Controlled with a baghouse, stack sampling and engineering estimate	38
Cadmium	7440439	3339	Primary lead smelting	Dross reverberatory furnace	30301003	2.4 lb/ton Pb produced	Uncontrolled, derived from one emission factor	46,97
Cadmium	7440439	3339	Primary lead smelting	Main stack (exhaust from acid plant and sinter baghouse)	303010	0.041 lb/ton Pb produced	Derived from one emission estimate	44,46,97
Cadmium	7440439	3339	Primary lead smelting	Ore crushing	30301004	0.755 lb/ton Pb produced	Uncontrolled, derived from one emission factor	46,97
Cadmium	7440439	3339	Primary lead smelting	Scrubber for blast furnace charge prep	303010	3 x 10E-5 - 7 x 10E-5 lb/ton Pb produced	Derived from one emission estimate	44,46,97
Cadmium	7440439	3339	Primary lead smelting	Scrubber for sinter prep and returns	303010	7.6 x 10E-5 - 1.9 x 10E-4 lb/ton Pb prod	Derived from one emission estimate	44,46,97

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Cadmium	7440439	3339	Primary lead smelting	Sintering (updraft)	303010	1.278 lb/ton Pb produced	Uncontrolled, derived from one emission factor	46,97
Cadmium	7440439	3341	Secondary copper smelting	Cupola	304003	0.03-0.112 lb/ton Cu produced	Controlled with baghouse, applicable only to facilities whose raw materials contain cadmium	44
Cadmium	7440439	3341	Secondary copper smelting	Top-blown rotary converter	304002	0.00108-0.00316 lb/ton Cu produced	Controlled with baghouse, applicable only to facilities whose raw materials contain cadmium	44
Cadmium	7440439	3341	Secondary copper smelting	Total plant emissions	304002	4 lb/ton of copper scrap	Control status unknown	41
Cadmium	7440439	3341	Secondary lead smelting	Blast furnace	30400403	2 x 10E-6 lb/ton Pb	Controlled with three cyclones + baghouse stack sampling + engineering estimate	38
Cadmium	7440439	3341	Secondary lead smelting	Reverberatory furnace	30400402	1.6 x 10E-6 lb/ton Pb	Controlled with cyclone + baghouse stack sampling + engineering estimate	38
Cadmium	7440439	3341	Secondary lead smelting	Reverberatory furnace	30400402	5 x 10E-7 lb/ton Pb	Controlled with three cyclones and baghouse	38
Cadmium	7440439	3341	Secondary zinc smelting	Total plant emissions	304008	0.01 lb/ton Zn produced	Uncontrolled	38
Cadmium	7440439	3471	Cadmium electroplating	Entire process		0.00005 g/hr/amp	Uncontrolled, measured	92
Cadmium	7440439	3691	Battery (nickel-cadmium) manufacture	Total plant emissions	304005	2 lb/ton Cd charged	Survey of companies	38
Cadmium	7440439	4953	Municipal waste combustion	Incinerator stack	501001	0.008 lb/ton munic solid waste-dry wt.	Controlled by spray-baffle scrubber, based on material balance for model incinerator	98
Cadmium	7440439	4953	Municipal waste combustion	Mass burn, refractory facility	501001	2.456 lb/ton controlled particulate emissions	Controlled by ESP, based on source tests	118
Cadmium	7440439	4953	Municipal waste combustion	Mass burn, water wall incinerator	501001	1.372 lb/ton controlled particulate emissions	Controlled by ESP, based on source tests	118
Cadmium	7440439	4953	Municipal waste combustion	Modular incinerator	501001	6.62 lb/ton controlled particulate emissions	Controlled by ESP, based on source tests	118
Cadmium	7440439	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	0.212 lb/ton controlled particulate emissions	Controlled by ESP, based on source test	118
Cadmium	7440439	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	0.0009 lb/ton RDF combusted	100% RDF fuel only, ESP control only, overall average of several source averages, range is 0.00032 - 0.0018 lb/ton	180
Cadmium	7440439	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	0.006 lb/ton RDF combusted	100% RDF fuel only, uncontrolled, overall average of several source averages	180
Cadmium	7440439	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	3.8 x 10E-5 lb/ton RDF combusted	Spray drying after acid gas and PM control, one data point, lower detection limit reported, 100% RDF fuel only	180

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Cadmium	7440439	4953	Municipal waste combustion	Modular starved-air combustor	501001	0.0008 lb/ton feed	ESP control only, overall average of several source averages, range is 0.00017 - 0.0017 lb/ton	180
Cadmium	7440439	4953	Municipal waste combustion	Modular starved-air combustor	501001	0.0054 lb/ton feed	Uncontrolled, overall average of several source averages, range is 0.002 - 0.0076 lb/ton	180
Cadmium	7440439	4953	Municipal waste combustion	Modular excess-air combustor	501001	0.00013 lb/ton feed	ESP control only, one data point only	180
Cadmium	7440439	4953	Municipal waste combustion	Modular excess-air combustor	501001	1.2 x 10E-10 lb/ton feed	Dry sorbent injection after acid gas and PM control, one data point only	180
Cadmium	7440439	4953	Municipal waste combustion	Mass burn, water wall incinerator	501001	0.024 lb/ton feed	Uncontrolled, one data point only	180
Cadmium	7440439	4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	0.00018 lb/ton feed	Capacity > 600 tons/day, ESP control only, overall average of several source averages, range is 8.8 x 10E-5 - 0.00030 lb/ton	180
Cadmium	7440439	4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	0.00018 lb/ton feed	Capacity > 600 tons/day, spray drying after acid gas and PM control,overall avg. of several source avgs., range is 0.00016 - 0.00019 lb/ton	180
Cadmium	7440439	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	0.008 lb/ton feed	Capacity < 600 tons/day, uncontrolled, one data point only	180
Cadmium	7440439	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	0.00050 lb/ton feed	Capacity < 600 tons/day, ESP control only, overall average of several source averages, range is 0.00018 - 0.00082	180
Cadmium	7440439	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	4.8 x 10E-5 lb/ton feed	Capacity < 600 tons/day, spray drying after acid gas and PM control,overall avg. of several source avgs., range is 2.4 x 10E-5 - 7.0 x 10E-5	180
Cadmium	7440439	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	4.0 x 10E-5 lb/ton feed	Capacity < 600 tons/day, dry sorbent injection after acid gas and PM control, one data point only	180
Cadmium	7440439	4953	Municipal waste combustion	Mass burn waterwall combustor, built before 1980	501001	0.0032 lb/ton feed	ESP control only, overall average of several source averages, range is 0.0024 - 0.0046 lb/ton	180
Cadmium	7440439	4953	Municipal waste combustion	Mass burn waterwall combustor, built before 1980	501001	0.022 lb/ton feed	Uncontrolled, overall average of several source averages, range is 0.0074 - 0.052 lb/ton	180
Cadmium	7440439	4953	Municipal waste combustion	Mass burn waterwall combustor, built before 1980	501001	7.2 x 10E-5 lb/ton feed	Dry sorbent injection after acid gas and PM control, one data point only	180

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Cadmium	7440439	4953	Municipal waste combustion	Mass burn, refractory facility	501001	0.0001 lb/ton feed	Spray drying after acid gas and PM control, one data point only	180
Cadmium	7440439	4953	Sewage sludge incineration	Fluidized-bed furnace	50100506	0.00148 lb/ton dry sludge	Average of three tests, scrubber	181
Cadmium	7440439	4953	Sewage sludge incineration	Multiple hearth furnace	50100506	0.0198 lb/ton dry sludge	Average of 13 tests, scrubber, range 5.2 x 10E-4 - 0.124	101
Cadmium	7440439	806	Hospital waste incineration	Incinerator	50200505	35.2 x 10E-4 lb/ton feed	Uncontrolled, test data	167
Calcium	7440702	2951	Asphaltic concrete production	Plant stack	305002	1.73 x 10E-5 lb/ton concrete	Uncontrolled from a single plant, avg. of 2 values, range is 1.03 x 10E-5 - 2.42 x 10E-5 lb/ton	170
Calcium	7440702	2951	Asphaltic concrete production	Plant stack	305002	2.76 x 10E-7 lb/ton concrete	Controlled (unspecified) from a single plant, avg. of 2 values, range is 1.72 x 10E-7 - 3.81 x 10E-7 lb/ton	170
Calcium	7440702	2951	Asphaltic concrete production	Plant stack	305002	3.3 x 10E-11 lb/ton concrete	Controlled (unspecified) from a single plant	170
Caprolactam	105602	2869	Ammonium sulfate production - caprolactam by-product	Rotary dryer	30121009	2.42 lb/hr	Based on test data	129
Carbon disulfide	75150	2824	Synthetic fibers production - viscose rayon	General emissions	30102501	58 lb/ton fibers	Uncontrolled, low quality factor	97
Carbon disulfide	75150	2869	CCl4 production - CS2 chlorination	Separation unit	30130201	4 lb/ton produced	Control uncertain, based on tests and mass balance	98
Carbon disulfide	75150	2895	Carbon black manufacture - oil furnace	Main process purge vent	30100504	60 lb/ton carbon black produced	Based on test data	97
Carbon monoxide	630080	2911	Petroleum refinery	Fluidized bed catalytic cracker unit regenerator	30600201	39.2 kg/m^3 of fresh fuel throughput	Uncontrolled emissions	185
Carbon monoxide	630080	3296	Mineral wool manufacturing	Mineral wool cupola	30501701	6-312 lbs/ton of mineral wool produced	Uncontrolled emissions, average of 9 tests was 156 lbs/ton	187
Carbon monoxide	630080	3312	Iron and steel production	Electric arc furnace (alloy steel)	30300904	4.9-6.5 lbs/ton of steel produced	Controlled by fabric filter, emissions collected by building evacuation, avg of 3 tests 5.6 lbs/ton	196
Carbon monoxide	630080	3312	Iron and steel production	Electric arc furnace (carbon steel)	30300908	0.54-1.07 lbs/ton of steel produced	Ctrl by venturi scrubber, emissions collected by direct shell evacuation, avg 3 tests 0.76 lbs/ton	196
Carbon monoxide	630080	3312	Iron and steel production	Electric arc furnace (carbon steel)	30300908	0.54-1.39 lbs/ton of steel produced	Ctrl by fabric filter, emissions collected by direct shell evacuation, avg 3 tests 1.04 lbs/ton	196
Carbon tetrachloride	56235		Waste oil combustion	Waste oil-fired boilers (<150 million Btu/h) or space heaters	1	0.25 lb/1000 gal oil burned	Uncontrolled, based on emissions data and engineering judgement, assumes 97% DRE	55

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Carbon tetrachloride	56238	2812	Chlorine production (chlor-alkali)	Absorber process vent tail gas scrubbing	301008	1.1 lb/ton chlorine production capacity	Uncontrolled, not all plants use CCl4	134
Carbon tetrachloride	56235	2812	Chlorine production (chlor-alkali)	Fugitives/tail gas scrubbing	301008	76 lb/ton chlorine production capacity	Uncontrolled, calculated by total emission/total capacity of plants that use CCl4	134
Carbon tetrachloride	56235	2812	Chlorine production (chlor-alkali)	Nitrogen trichloride diluent	301008	3.2 lb/ton CCl4 used	Uncontrolled, not all plants use CCl4 in this way	134
Carbon tetrachloride	56235	2822	Hypalon® production	All sources		495,000 lb/yr	One plant only in U.S.	134
Carbon tetrachloride	56235	2834	Pharmaceutical manufacture	Plantwide emissions	301060	220 lb/ton CCl4 used	Industry-wide mass balance	163
Carbon tetrachloride	56235	2869	CCl4 production - CS2 chlorination	Chlorinator	30130201	232 lb/ton CCl4 produced	Uncontrolled	163
Carbon tetrachloride	56235	2869	CCl4 production - CS2 chlorination	Chlorinator	30130201	11.6 lb/ton CCl4 produced	Refrigerated condenser	163
Carbon tetrachloride	56235	2869	CCl4 production - CS2 chlorination	Loading tank cars, barges, trucks, etc.	301302	0.48 lb/ton CCl4 produced	Uncontrolled	163
Carbon tetrachloride	56235	2869	CCl4 production - CS2 chlorination	Loading tank cars, barges, trucks, etc.	301302	0.072 lb/ton CCl4 produced	Refrigerated condenser	163
Carbon tetrachloride	56235	2869	CCl4 production - CS2 chlorination	Process fugitive emissions	30130280	1.2 lb/ton CCl4 produced	Uncontrolled	163
Carbon tetrachloride	56235	2869	CCl4 production - CS2 chlorination	Process fugitive emissions	30130280	0.44 lb/ton CCl4 produced	Quarterly I/M pumps and valves	163
Carbon tetrachloride	56235	2869	CCl4 production - CS2 chlorination	Process fugitive emissions	30130280	0.44 lb/ton CCl4 produced	Monthly I/M pumps and valves	163
Carbon tetrachloride	56235	2869	CCl4 production - CS2 chlorination	Process fugitive emissions	30130280	0.28 lb/ton CCl4 produced	Monthly I/M valves, double mechanical seals on pumps, rupture disks on relief valves	163
Carbon tetrachloride	56235	2869	CCl4 production - CS2 chlorination	Storage	407060	1.52 lb/ton CCl4 produced	Uncontrolled	163
Carbon tetrachloride	56235	2869	CCl4 production - CS2 chlorination	Storage	407060	0.22 lb/ton CCl4 produced	Refrigerated condenser	163
Carbon tetrachloride	56235	2869	CCl4 production - hydrocarbon chlorinolysis	Carbon tetrachloride tank	407060	1.16 lb/ton CCl4 produced	Uncontrolled	163
Carbon tetrachloride	56235	2869	CCl4 production - hydrocarbon chlorinolysis	Carbon tetrachloride tank	407060	0.174 lb/ton CCl4 produced	Refrigerated condenser	163
Carbon tetrachloride	56235	2869	CCl4 production - hydrocarbon chlorinolysis	Crude tank (storage)	407060	0.196 lb/ton CCl4 produced	Uncontrolled	163

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Carbon tetrachloride	56235	2869	CCl4 production - hydrocarbon chlorinolysis	Crude tank (storage)	407060	0.026 lb/ton CCl4 produced	Refrigerated condenser	163
Carbon tetrachloride	56235	2869	CCl4 production - hydrocarbon chlorinolysis	Day tanks	407060	0.9 lb/ton CCl4 produced	Uncontrolled, value for two tanks	163
Carbon tetrachloride	56235	2869	CCl4 production - hydrocarbon chlorinolysis	Day tanks	407060	9.064 lb/ton CCl4 produced	Refrigerated condenser, value for two tanks	163
Carbon tetrachloride	56235	2869	CCl4 production - hydrocarbon chlorinolysis	Distillation column	30130202	0.016 lb/ton CCl4 produced	Uncontrolled	163
Carbon tetrachloride	56235	2869	CCl4 production - hydrocarbon chlorinolysis	Hex waste handling, disposal	503007	0.0092 lb/ton CCl4 produced	Uncontrolled	163
Carbon tetrachloride	56235	2869	CCl4 production - hydrocarbon chlorinolysis	Hex waste handling, disposal	503007	9.2 x 10E-5 lb/ton CCl4 produced	Vapor balance and refrigerated condenser	163
Carbon tetrachloride	56235	2869	CCl4 production - hydrocarbon chlorinolysis	Loading barges, tanks	301302	0.48 lb/ton CCl4 produced	Uncontrolled	163
Carbon tetrachloride	56235	2869	CCl4 production - hydrocarbon chlorinolysis	Loading barges, tanks	301302	0.072 lb/ton CCl4 produced	Refrigerated condensers	163
Carbon tetrachloride	56235	2869	CCl4 production - hydrocarbon chlorinolysis	Process fugitive emissions	30130280	3.31 lb/hr	Uncontrolled	163
Carbon tetrachloride	56235	2869	CCl4 production - hydrocarbon chlorinolysis	Process fugitive emissions	30130280	1.19 lb/hr	Monthly I/M pumps and valves	163
Carbon tetrachloride	56235	2869	CCl4 production - hydrocarbon chlorinolysis	Process fugitive emissions	30130280	1.72 lb/hr	Quarterly I/M pumps and valves	163
Carbon tetrachloride	56235	2869	CCl4 production - hydrocarbon chlorinolysis	Process fugitive emissions	30130280	0.90 lb/hr	Monthly I/M valves, double mechanical seals on pumps, rupture disks on relief valves	163
Carbon tetrachloride	56235	2869	CCl4 production - hydrocarbon chlorinolysis	Waste caustic	503007	0.0058 lb/ton CCl4 produced	Uncontrolled	163
Carbon tetrachloride	56235	2869	CCl4 production - hydrocarbon chlorinolysis	Waste caustic	503007	2.4 x 10E-4 lb/ton CCl4 produced	Steam stripper	163
Carbon tetrachloride	56235	2869	CCl4 production - methane chlorination	Crude tank (storage)	407060	0.114 lb/ton CCl4 produced	Uncontrolled	163
Carbon tetrachloride	56235	2869	CCl4 production - methane chlorination	Crude tank (storage)	407060	0.0092 lb/ton CCl4 produced	Refrigerated condenser	163
Carbon tetrachloride	56235	2869	CCl4 production - methane chlorination	Day tanks	407060	0.72 lb/ton CCl4 produced	Uncontrolled, value is for two tanks	163

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Carbon tetrachloride	56235	2869	CCl4 production - methane chlorination	Dry tanks	407060	0.06 lb/ton CCl4 produced	Refrigerated condenser, value is for two tanks	163
Carbon tetrachloride	56235	2869	CCl4 production - methane chlorination	Distillation area emergency inert gas vent	301125	0.104 lb/ton CCl4 produced	Uncontrolled	163
Carbon tetrachloride	56235	2869	CCl4 production - methane chlorination	Loading tank cars, barges	408	0.48 lb/ton CCl4 produced	Uncontrolled	163
Carbon tetrachloride	56235	2869	CCl4 production - methane chlorination	Loading tank cars, barges	408	0.072 lb/ton CCl4 produced	Refrigerated condenser	163
Carbon tetrachloride	56235	2869	CCl4 production - methane chlorination	Process fugitive emissions	30112514	9.64 lb/hr	Uncontrolled	163
Carbon tetrachloride	56235	2869	CCl4 production - methane chlorination	Process fugitive emissions	30112514	3.92 lb/hr	Quarterly I/M pumps and valves	163
Carbon tetrachloride	56235	2869	CCl4 production - methane chlorination	Process fugitive emissions	30112514	2.42 lb/hr	Monthly I/M pumps and valves	163
Carbon tetrachloride	56235	2869	CCl4 production - methane chlorination	Process fugitive emissions	30112514	1.63 lb/hr	Monthly I/M valves, double mechanical seals on pumps, rupture disks on relief valves	163
Carbon tetrachloride	56235	2869	CCl4 production - methane chlorination	Process waste liquids - handling and disposal	50300701	0.036 lb/ton CCl4 produced	Uncontrolled	163
Carbon tetrachloride	56235	2869	CCl4 production - methane chlorination	Product storage tank vents	407060	1.28 lb/ton CCl4 produced	Uncontrolled	163
Carbon tetrachloride	56235	2869	CCl4 production - methane chlorination	Product storage tank s	407060	0.192 lb/ton CCl4 produced	Refrigerated condenser	163
Carbon tetrachloride	56235	2869	CCl4 production - methane chlorination	Recycled methane inert gas purge vent	30112511	<0.084 lb/ton CCl4 produced	Uncontrolled	163
Carbon tetrachloride	56235	2869	CCl4 production - methanol/methyl chloride chlorination	Carbon tetrachloride tank	407060	2.78 lb/ton CCl4 produced	Uncontrolled	163
Carbon tetrachloride	56235	2869	CCl4 production - methanol/methyl chloride chlorination	Carbon tetrachloride tank	407060	0.42 lb/ton CCl4 produced	Refrigerated condenser	163
Carbon tetrachloride	56235	2869	CCl4 production - methanol/methyl chloride chlorination	Crude tank (storage)	407060	0.98 lb/ton CCl4 produced	Uncontrolled	163
Carbon tetrachloride	56235	2869	CCl4 production - methanol/methyl chloride chlorination	Crude tank (storage)	407060	0.0024 lb/ton CCl4 produced	Refrigerated condenser	163

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Carbon tetrachloride	56235	2869	CCl4 production - methanol/methyl chloride chlorination	Loading tank cars, barges, trucks, etc.	301302	1.04 lb/ton CCl4 produced	Uncontrolled	163
Carbon tetrachloride	56235	2869	CCl4 production - methanol/methyl chloride chlorination	Loading tank cars, barges, trucks, etc.	301302	0.156 lb/ton CCl4 produced	Refrigerated condenser	163
Carbon tetrachloride	56235	2869	CCl4 production - methanol/methyl chloride chlorination	Process fugitive emissions	30130280	1.04 lb/hr	Uncontrolled	163
Carbon tetrachloride	56235	2869	CCl4 production - methanol/methyl chloride chlorination	Process fugitive emissions	30130280	0.62 lb/hr	Quarterly I/M pumps and valves	163
Carbon tetrachloride	56235	2869	CCl4 production - methanol/methyl chloride chlorination	Process fugitive emissions	30130280	0.42 lb/hr	Monthly I/M pumps and valves	163
Carbon tetrachloride	56235	2869	CCl4 production - methanol/methyl chloride chlorination	Process fugitive emissions	30130280	0.2 lb/hr	Monthly I/M valves, double mechanical seals on pumps, rupture disks on relief valves	163
Carbon tetrachloride	56235	2869	CCl4 production - methanol/methyl chloride chlorination	Surge tank	407060	0.114 lb/ton CCl4 produced	Uncontrolled	163
Carbon tetrachloride	56235	2869	CCl4 production - methanol/methyl chloride chlorination	Surge tank	407060	0.0046 lb/ton CCl4 produced	Refrigerated condenser	163
Carbon tetrachloride	56235	2869	Chloromethane production - methane chlorination	Recycled methane inert gas purge vent	30112511	<0.0084 lb/ton total chlorometh. capac.	Uncontrolled, based on information supplied by one producer	71
Carbon tetrachloride	56235	2869	Dry chlorinated paraffin production	All sources		2.07 x 10E4 lb/yr	Only one plant in U.S.	134
Carbon tetrachloride	56235	2869	Ethylene dichloride production - balanced process	Column vents	301125	0.28 lb/ton EDC produced	Uncontrolled	163
Carbon tetrachloride	56235	2869	Ethylene dichloride production - balanced process	Column vents	301125	<5.6 x 10E-3 lb/ton EDC produced	Thermal oxidizer	163
Carbon tetrachloride	56235	2869	Ethylene dichloride production - balanced process	Liquid waste storage	30112509	0.0102 lb/ton EDC produced	Uncontrolled	163
Carbon tetrachloride	56235	2869	Ethylene dichloride production - balanced process	Liquid waste storage	30112509	0.00154 lb/ton EDC produced	Refrigerated condenser	163

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Carbon tetrachloride	56235	2869	Ethylene dichloride production - balanced process	Oxychlorination vent - air process	30112501	3.4 lb/ton EDC produced	Uncontrolled, high value of range (0.98-3.4)	143
Carbon tetrachloride	56235	2869	Ethylene dichloride production - balanced process	Oxychlorination vent - air process	30112501	0.048 lb/ton EDC produced	Thermal oxidizer, high value of range (0.0114-0.048)	143
Carbon tetrachloride	56235	2869	Ethylene dichloride production - balanced process	Oxychlorination vent - oxygen process	30112502	0.36 lb/ton EDC produced	Uncontrolled, high value of range (0.088-0.36)	143
Carbon tetrachloride	56235	2869	Ethylene dichloride production - balanced process	Oxychlorination vent - oxygen process	30112501	0.0072 lb/ton EDC produced	Thermal oxidizer, high value of range (0.00176 - 0.0072)	143
Carbon tetrachloride	56235	2869	Ethylene dichloride production - oxyhydrochlorination	Absorption	30112501	0.006 lb/ton produced	Control unclear, based on mass balance and testing	95
Carbon tetrachloride	56235	2869	Ethylene dichloride production - oxyhydrochlorination	Separation unit	30112501	0.188 lb/ton produced	Control unclear, based on mass balance and testing	95
Carbon tetrachloride	56235	2869	Fluorocarbon 11/12 production	Distillation column	30112702	0.046 lb/ton FC 11/12 produced	Refrigerated condenser and CCl4 scrubber	143
Carbon tetrachloride	56235	2869	Fluorocarbon 11/12 production	Reactor vent	30112701	0.004 lb/ton FC 11/12 produced	Uncontrolled	143
Carbon tetrachloride	56235	2869	Fluorocarbon 11/12 production	Storage	407060	1.48 lb/ton FC 11/12 produced	Uncontrolled, high value of range (0.38-1.48)	143
Carbon tetrachloride	56235	2869	Fluorocarbon 11/12 production	Storage	407060	0.22 lb/ton FC 11/12 produced	Refrigerated condenser, high value of range (0.058-0.22)	143
Carbon tetrachloride	56235	2869	Perchloroethylene production	Chlorination of ethylene dichloride proc/distillation vent	30112521	0.052 lb/ton of PCE produced	Uncontrolled, based on data from one producer	1
Carbon tetrachloride	56235	2869	Perchloroethylene production	Chlorination of ethylene dichloride proc/neutralize & drying area vent	30112520	0.128 lb/ton of PCE produced	Uncontrolled, based on data from one producer	1
Carbon tetrachloride	56235	2869	Perchloroethylene production - EDC chlorination	Distillation column	30112521	0.054 lb/ton PCE produced	Uncontrolled	143
Carbon tetrachloride	56235	2869	Perchloroethylene production - EDC chlorination	Drying column	30112520	0.126 lb/ton PCE produced	Uncontrolled	143

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Carbon tetrachloride	56235	2869	Perchloroethylene production - EDC chlorination	Drying column	30112520	0.010 lb/ton PCE produced	Condenser	143
Carbon tetrachloride	56235	2869	Perchloroethylene production - EDC chlorination	Light ends/heavy ends mixtank	301125	0.22 lb/ton PCE produced	Uncontrolled	143
Carbon tetrachloride	56235	2869	Perchloroethylene production - EDC chlorination	Light ends/heavy ends mixtank	301125	0.044 lb/ton PCE produced	Condenser	143
Carbon tetrachloride	56235	2869	Perchloroethylene production - EDC chlorination	Neutralization	30112522	0.032 lb/ton PCE produced	Uncontrolled	143
Carbon tetrachloride	56235	2869	Perchloroethylene production - EDC chlorination	Process fugitive emissions	30112524	6.2 lb/hr	Uncontrolled	143
Carbon tetrachloride	56235	2869	Perchloroethylene production - EDC chlorination	Storage - light ends	407040	0.22 lb/ton PCE produced	Uncontrolled	143
Carbon tetrachloride	56235	2869	Perchloroethylene production - EDC chlorination	Storage - light ends	407040	0.0024 lb/ton PCE produced	Condenser	143
Carbon tetrachloride	56235	2869	Trichloroethylene production by oxyhydrochlorination process	Absorption	30112530	26 lb/ton produced	Control unclear, Based on mass balance and testing	99
Carbon tetrachloride	56235	2879	Pesticide manufacturing	All sources	31033	960 lb/ton CCl4 used	CCl4 not used in all pesticide production	134
Carbon tetrachloride	56235	2899	Symmetrical tetrachloropyridine production	All sources		150,000 lb/yr	Two plants in U.S., some control	134
Carbon tetrachloride	56235	4953	Sewage sludge incineration	Fluidized-bed furnace	50100504	2 x 10E-5 lb/ton dry sludge	One test, scrubber	101
Carbon tetrachloride	56235	4953	Sewage sludge incineration	Multiple hearth furnace	50100506	1 x 10E-4 lb/ton dry sludge	Average of five tests, scrubber	101
Carbon tetrachloride	56235	4953	Wastewater treatment	POTW	50100701	1420 lb/ton of carbon tet. in influent	Based on mass, modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	99
Carbon tetrachloride	56235	806	Hospital waste incineration	Incinerator	50200505	9.9 x 10E-5 lb/ton feed	Uncontrolled, test data	147

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Carbonyl sulfide	463581	2895	Carbon black manufacture - oil furnace	Main process purge vent	30100504	20 lb/ton carbon black produced	Based on test data	97
Chlordane	57749	4953	Sewage sludge incineration	Fluidized-bed furnace	50100504	<0.001126 lb/ton dry sludge	One test, scrubber	101
Chlordane	57749	4953	Sewage sludge incineration	Multiple hearth furnace	50100504	<4.8 x 10E-4 lb/ton dry sludge	One test, scrubber	101
Chloric acid, sodium salt	7775099		Cotton defoliating/desiccating	Drift during application		20 lb/ton applied	Estimated	97
Chlorine	7782505	2611	Pulp/paper mill, pulp and paper bleaching	Chlorine dioxide generation		0.4 lb/ton pulp bleached		133
Chlorine	7782505	2611	Pulp/paper mill, pulp and paper bleaching	Entire process		1 lb/ton pulp bleached		133
Chlorine	7782505	2812	Chlorine production (chlor-alkali)	Air blowing mercury cell brine	30100805	900 lb/100 tons	Engineering judgement and test data	97
Chlorine	7782505	2812	Chlorine production (chlor-alkali)	Air blowing of brine	30100805	56 lb/100 ton Cl produced	Mercury-cell plants, no control	29
Chlorine	7782505	2812	Chlorine production (chlor-alkali)	Cell gas condensate	301008	400-1200 lb/100 ton Cl liquified	No control	29
Chlorine	7782505	2812	Chlorine production (chlor-alkali)	Diaphrag cell process, liquefaction blow gases	30100801	10,000 lb/100 tons produced	Range of 2,000-10,000 lb/100 tons	97
Chlorine	7782505	2812	Chlorine production (chlor-alkali)	Liquefaction blow gases	301008	2,000-14,000 lb/100 ton Cl liquified	No control	29
Chlorine	7782505	2812	Chlorine production (chlor-alkali)	Liquefaction blow gases	301008	25-1090 lb/100 ton Cl liquified	Controlled with water absorber	29
Chlorine	7782505	2812	Chlorine production (chlor-alkali)	Liquefaction blow gases	301008	1 lb/100 ton Cl liquefied	Controlled with caustic or lime scrubber	29
Chlorine	7782505	2812	Chlorine production (chlor-alkali)	Loading chlorine/storage tank vents	30100804	1200 lb/100 tons	Engineering judgement and test data	97
Chlorine	7782505	2812	Chlorine production (chlor-alkali)	Loading chlorine/tank car vents	30100803	450 lb/100 tons	Engineering judgement and test data	97
Chlorine	7782505	2812	Chlorine production (chlor-alkali)	Mercury cell process, liquefaction blow gases	30100802	16,000 lb/100 tons produced	Range of 4,000-16,000 lb/100 tons	97
Chlorine	7782505	2812	Chlorine production (chlor-alkali)	Tank car loading venting	30100803	0-100.8 lb/100 ton Cl liquified	Controlled with scrubber	29

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Chlorine	7782505	2869	CCl4 and perchloroethylene production - propane chlorination	Dryer	30130201	20.00 lb/ton produced	Control uncertain, based on tests and mass balance	95
Chlorine	7782505	2869	CCl4 production - CS2 chlorination	Separation unit	30130201	0.0003 lb/ton produced	Control uncertain, based on tests and mass balance	95
Chlorine	7782505	2869	Epichlorohydrin production by hydrochlorination	Absorption	301305	0.001 lb/ton produced	Control unclear, based on mass balance and testing	95
Chlorine	7782505	2869	Epichlorohydrin production by hydrochlorination	Separation unit	301305	0.001 lb/ton produced	Control unclear, based on mass balance and testing	95
Chlorine	7782505	2869	Ethyl chloride production by hydrochlorination	Separation unit	301125	0.001 lb/ton produced	Control uncertain, based on mass balance and tests	95
Chlorine	7782505	2869	Ethylene dichloride production - oxyhydrochlorination	Absorption	30112501	0.0038 lb/ton produced	Control unclear, based on mass balance and testing	95
Chlorine	7782505	2869	Ethylene dichloride production - oxyhydrochlorination	Separation unit	30112501	0.01 lb/ton produced	Control unclear, based on mass balance and testing	95
Chlorine	7782505	2875	Fertilizer mixing	Ammoniation-granulation process	30104501	0.0132 lb/ton fertilizer		133
Chlorine	7782505	3312	Steel production	AOD vessel - melt and refine cycle	303009	0.044 lbs/ton specialty steel	Uncontrolled emissions	198
Chlorine	7782505	3312	Steel production	Electric arc furnace - melting/refining	30300908	0.18 - 0.48 lbs/ton carbon steel	Uncontrolled emissions	198
Chlorine	7782505	3312	Steel production	Electric arc furnace - charge and tap cycle	30300908	0.019 - 0.026 lbs/ton carbon steel	Uncontrolled emissions	198
Chlorine	7782505	4911	Coal combustion	Boiler	1	2.44 lb/ton coal burned	Calculated from information in reference	133
Chlorobenzene	108907	2865	Chlorobenzene production	Fugitive emissions	30130180	1.38 lb/ton chlorobenzene produced	Estimates based on plant visits, no specifics on control, likely to be high value	48
Chlorobenzene	108907	2865	Chlorobenzene production	Process emissions	30130135	4.12 lb/ton chlorobenzene produced	Estimates based on plant visits, no specifics on control, likely to be high value	48
Chlorobenzene	108907	2865	Chlorobenzene production	Storage tank emissions	407	0.9 lb/ton chlorobenzene produced	Estimates based on plant visits, no specifics on control, likely to be high value	48
Chlorobenzene	108907	2869	Chlorobenzene prod. (mono- & di-), direct chlorination	Absorption	30112535	0.06 lb/ton produced	Control uncertain, based on tests and mass balance	95

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Chlorobenzene	108907	4741	Rail tank car cleaning	Entire process	49003	0.0346 lb/tank car	Emission measurement	97
Chlorobenzene	108907	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	1.7 x 10E-5 lb/ton	100% RDF fuel only, ESP control only, one data point only	180
Chlorobenzene	108907	4953	Municipal waste combustion	Modular starved-air combustor	501001	3.4 x 10E-5 lb/ton	Uncontrolled, overall average of several source averages, range is 2.6 x 10E-5 - 4.4 x 10E-5 lb/ton	180
Chlorobenzene	108907	4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	6.4 x 10E-6 lb/ton feed	Capacity > 400 tons/day, ESP control only, overall average of several source averages, range is 5.6 x 10E-6 - 7.0 x 10E-6 lb/ton	180
Chlorobenzene	108907	4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	4.4 x 10E-6 lb/ton feed	Capacity > 400 tons/day, uncontrolled, one data point only, detection limit reported	180
Chlorobenzene	108907	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	5.8 x 10E-5 lb/ton feed	Capacity < 400 tons/day, ESP control only, overall avg. of several source avgs., range is 2.4 x 10E-5 - 1.04 x 10E-4 lb/ton	180
Chlorobenzene	108907	4953	Municipal waste combustion	Mass burn waterwall combustor, built before 1980	501001	0.00082 lb/ton feed	ESP control only, overall average of several source averages, range is 1.8 x 10E-5 - 0.0028 lb/ton	180
Chlorobenzene	108907	4953	Municipal waste combustion	Mass burn waterwall combustor, built before 1980	501001	2 x 10E-5 lb/ton feed	Uncontrolled, one data point only	180
Chlorobenzene	108907	4953	Sewage sludge incineration	Fluidized-bed furnace	50100504	2 x 10E-5 lb/ton dry sludge	One test, scrubber	101
Chlorobenzene	108907	4953	Sewage sludge incineration	Multiple hearth incinerator	50100504	0.0024 lb/ton dry sludge	Average of five tests, scrubber	101
Chlorobenzene	108907	4953	Wastewater treatment	POTW	50100701	1040 lb/ton of chlorobenzene in influ	Based on mats. modeling for Rypoth. POTW, represents average POTW that treats industrial wastewater	59
Chlorobenzenes		4953	Municipal waste combustion	Existing mass burn heat recovery facility	501001	6.4 x 10E-4 lb/ton of waste combusted	Controlled by ESP, based on source tests	110
Chlorobenzenes		4953	Municipal waste combustion	Existing mass burn heat recovery facility	501001	4 x 10E-5 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	110
Chlorobenzenes		4953	Municipal waste combustion	Mass burn, nonheat recovery facility	501001	6.4 x 10E-4 lb/ton of waste combusted	Controlled by ESP, based on source tests	110
Chlorobenzenes		4953	Municipal waste combustion	Mass burn, nonheat recovery facility	501001	4 x 10E-5 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	110
Chlorobenzenes		4953	Municipal waste combustion	Modular incinerator	501001	3.6 x 10E-5 lb/ton of waste combusted	Controlled by ESP, based on source tests	110

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POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Chlorobenzenes		4953	Municipal waste combustion	Modular incinerator	501001	2 x 10E-6 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Chlorobenzenes		4953	Municipal waste combustion	Projected or state-of-the-art mass burn heat recovery facility	501001	1.78 x 10E-5 lb/ton of waste combusted	Controlled by ESP, based on source test	118
Chlorobenzenes		4953	Municipal waste combustion	Projected or state-of-the-art mass burn heat recovery facility	501001	1.2 x 10E-6 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Chlorobenzenes		4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	2.8 x 10E-4 lb/ton of waste combusted	Controlled by ESP, based on source tests	118
Chlorobenzenes		4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	1.8 x 10E-5 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Chloroethane	75003	2869	Acetaldehyde production	Off-gas vent	30112014	2.2 lb/ton acetaldehyde	Controlled, low pressure scrubber, data from one plant	143
Chloroethane	75003	2869	Ethyl chloride production by hydrochlorination	Separation unit	301125	5 lb/ton produced	Control uncertain, based on mass balance and tests	95
Chloroethane	75003	2869	Ethyl chloride production by hydrochlorination of ethanol	Fugitive emissions	301125	48,300 lb/yr	Reported as very conservative estimate, based on SOCMI emission factors	65
Chloroethane	75003	2869	Ethyl chloride production by hydrochlorination of ethanol	Process - general	30112518	5.84 lb/ton produced	Control status unclear, based on plant producing ethyl chloride by hydrochlorination of ethylene	65
Chloroethane	75003	2869	Ethyl chloride production by hydrochlorination of ethylene	Fugitive emissions	301125	48,300 lb/yr	Reported as very conservative estimate, based on SOCMI emission factors	65
Chloroethane	75003	2869	Ethyl chloride production by hydrochlorination of ethylene	Process - general	30112515	5.84 lb/ton produced	Control status unclear, based on Texas ACB Emission inventory data for one source	65
Chloroethane	75003	2869	Ethylene dichloride production	Fugitive emissions	30112509	9.54 x 10E-3 lb/ton EDC produced	Based on Texas ACB data for one source	65
Chloroethane	75003	2869	Ethylene dichloride production	Process - general	301125	6.5 x 10E-5 lb/ton EDC produced	Based on Texas ACB data for one source, partially controlled	65
Chloroethane	75003	2869	Ethylene dichloride production - oxyhydrochlorination	Separation unit	30112501	0.094 lb/ton produced	Control unclear, based on mass balance and testing	95
Chloroethane	75003	2869	Tetraethyl lead production	Fugitive emissions	301042	0.115 lb/ton of tetraethyl lead prod.	Based on one facility's response to a 1975 emission inventory questionnaire	65

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Chloroethane	75003	2869	Tetraethyl lead production	Process - general	301042	82 lb/ton tetraethyl lead produced	Based on Texas ACB Emission Inventory data for one source	65
Chloroethane	75003	4953	Sewage sludge incineration	Multiple hearth furnace	50100506	0.0016 lb/ton dry sludge	One test, scrubber	101
Chloroethane	75003	4953	Wastewater treatment	POTW	50100701	1340 lb/ton of ethyl chloride in influen	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	99
Chloroform	67663	2611	Secondary fiber mills	Paint - fine papers	307	0.72 lb/ton total products	During wastewater treatment	144
Chloroform	67663	2611	Secondary fiber mills	Paint - fine papers	307	0.026 lb/ton total products	After wastewater treatment	144
Chloroform	67663	2611	Secondary fiber mills	Paint - tissue papers	307	0.32 lb/ton total products	During wastewater treatment	144
Chloroform	67663	2611	Secondary fiber mills	Paint - tissue papers	307	0.0134 lb/ton total products	After wastewater treatment	144
Chloroform	67663	2621	Pulp/paper mill, integrated	Bleached Kraft paperboard, coarse papers	307	0.44 lb/ton total products	During wastewater treatment	144
Chloroform	67663	2621	Pulp/paper mill, integrated	Bleached Kraft paperboard, coarse papers	307	0.0018 lb/ton total products	After wastewater treatment	144
Chloroform	67663	2621	Pulp/paper mill, integrated	Dissolving Kraft pulp	307001	0.24 lb/ton total products	During wastewater treatment	144
Chloroform	67663	2621	Pulp/paper mill, integrated	Dissolving Kraft pulp	307001	0.026 lb/ton total products	After wastewater treatment	144
Chloroform	67663	2621	Pulp/paper mill, integrated	Dissolving sulfite pulp	307002	0138 lb/ton total products	During wastewater treatment	144
Chloroform	67663	2621	Pulp/paper mill, integrated	Dissolving sulfite pulp	307002	0.007 lb/ton total products	After wastewater treatment	144
Chloroform	67663	2621	Pulp/paper mill, integrated	Market bleached Kraft pulp	307	0.44 lb/ton total products	During wastewater treatment	144
Chloroform	67663	2621	Pulp/paper mill, integrated	Market bleached Kraft pulp	307	0.0038 lb/ton total products	After wastewater treatment	144
Chloroform	67663	2621	Pulp/paper mill, integrated	Soda and Kraft fine bleached papers	307	0.26 lb/ton total products	During wastewater treatment	144
Chloroform	67663	2621	Pulp/paper mill, integrated	Soda and Kraft fine bleached papers	307	0.0118 lb/ton total products	After wastewater treatment	144

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Chloroform	67663	2621	Pulp/paper mill, integrated	Sulfite papergrade pulp and paper	307	0.76 lb/ton total products	During wastewater treatment	164
Chloroform	67663	2621	Pulp/paper mill, integrated	Sulfite papergrade pulp and paper	307	0.148 lb/ton total products	After wastewater treatment	164
Chloroform	67663	2833	Ascorbic acid production	Plantwide emissions	301060	4.92 x 10E5 lb/yr	Based on one facility (30 million lb/yr production)	160
Chloroform	67663	2834	Pharmaceutical manufacture	Plantwide emissions	301060	320 lb/ton chloroform used	Controlled	164
Chloroform	67663	2869	Acetaldehyde production	Off-gas vent	30112014	0.8 lb/ton acetaldehyde	Controlled, low pressure scrubber, data from one plant	143
Chloroform	67663	2869	Chloroform production (any method)	Handling (loading of tank trucks and tank cars)	301125	0.7 lb/ton loaded	Uncontrolled	164
Chloroform	67663	2869	Chloroform production - methane chlorination	Distillation area emergency inert gas vent	30112510	0.016 lb/ton total chloromethanes prod.	Uncontrolled	164
Chloroform	67663	2869	Chloroform production - methane chlorination	Handling/disposing liquid waste	50300701	0.42 lb/ton chloroform produced	Uncontrolled, assumed all CHCl3 evaporates	164
Chloroform	67663	2869	Chloroform production - methane chlorination	Methane inert purge vent	30112511	0.0066 lb/ton total chloromethanes prod.	Uncontrolled	164
Chloroform	67663	2869	Chloroform production - methane chlorination	Process fugitive emissions	30112514	6.83 lb/hr	Uncontrolled	164
Chloroform	67663	2869	Chloroform production - methane chlorination	Process fugitive emissions	30112514	2.42 lb/hr	Controlled, monthly I&M, see reference for more control values	164
Chloroform	67663	2869	Chloroform production - methane chlorination	Storage tank emissions	407060	3 lb/ton total chloromethanes produced	Total of crude, day and product tanks for 1.1 x 10E8 lb plant, fixed roof tanks	164
Chloroform	67663	2869	Chloroform production - methanol/CH3Cl chlorination	Process fugitive emissions	30112514	1.01 lb/hr	Controlled, monthly I&M, see reference for more control values	164
Chloroform	67663	2869	Chloroform production - methanol/CH3Cl chlorination	Process fugitive emissions	30112514	3.09 lb/hr	Uncontrolled	164
Chloroform	67663	2869	Chloroform production - methanol/CH3Cl chlorination	Storage tank emissions	407060	3.2 lb/ton total chloromethane produce	Total of crude, surge, day, product tanks for 4.96 x 10E7 lb plant, fixed roof tanks	164
Chloroform	67663	2869	Chloromethane production - methane chlorination	Recycled methane inert gas purge vent	30112511	0.0066 lb/ton total chloromethanes capa	Uncontrolled, based on information supplied by one producer	71
Chloroform	67663	2869	Chloromethane production - methanol/CH3Cl chlorination	Inert-gas purge vent for condenser associated with chloroform distill.	30112510	0.0112 lb/ton total chloromethanes prod.	Uncontrolled, hypoth. fac. producing 25% methyl chloride, 48% MC, 25% chloroform, & 2% carbon tet.	72

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POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Chloroform	67663	2869	Ethylene dichloride production - balanced process	Column vents	30112501	2 lb/ton EDC produced	Uncontrolled	144
Chloroform	67663	2869	Ethylene dichloride production - balanced process	Column vents	30112501	<0.04 lb/ton EDC produced	Thermal oxidizer	144
Chloroform	67663	2869	Ethylene dichloride production - balanced process	Liquid waste storage	30112509	0.006 lb/ton EDC produced	Uncontrolled	144
Chloroform	67663	2869	Ethylene dichloride production - balanced process	Liquid waste storage	30112509	0.0009 lb/ton EDC produced	Refrigerated condensor	144
Chloroform	67663	2869	Ethylene dichloride production - balanced process	Oxychlorination vent - air process	30112501	1.3 lb/ton EDC produced	Highest value reported in reference uncontrolled	144
Chloroform	67663	2869	Ethylene dichloride production - balanced process	Oxychlorination vent - air process	30112501	0.026 lb/ton EDC produced	Highest value reported in reference thermal oxidizer	144
Chloroform	67663	2869	Ethylene dichloride production - balanced process	Oxychlorination vent - oxygen process	30112501	0.24 lb/ton EDC produced	Highest value in reference uncontrolled	144
Chloroform	67663	2869	Ethylene dichloride production - balanced process	Oxychlorination vent - oxygen process	30112501	0.0048 lb/ton EDC produced	Highest value in reference thermal oxidizer	144
Chloroform	67663	2869	Ethylene dichloride production - oxyhydrochlorination	Absorption	30112501	0.01 lb/ton produced	Control unclear, based on mass balance and testing	95
Chloroform	67663	2869	Ethylene dichloride production - oxyhydrochlorination	Separation unit	30112501	0.084 lb/ton produced	Control unclear, based on mass balance and testing	95
Chloroform	67663	2869	Fluorocarbon 22 production	Chloroform storage	407060	5.08 lb/ton fluorocarbon 22 produced	Uncontrolled, fixed roof tank	154
Chloroform	67663	2869	Fluorocarbon 22 production	Chloroform storage	407060	0.6 lb/ton fluorocarbon 22 produced	Controlled with refrigerated condensor	144
Chloroform	67663	2869	Fluorocarbon 22 production	Fugitive emissions	30112780	<0.051 lb/hr	Uncontrolled	144
Chloroform	67663	2869	Methylene chloride production - methane chlorination	Fugitive emissions	30112514	0.36 lb/ton product	Derived from site visit	13

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Chloroform	67663	2869	Methylene chloride production - methane chlorination	Inert gas purge vent/product recovery condenser	301125	8.0 x 10E-3 lb/ton product	Derived from site visit	13
Chloroform	67663	2869	Methylene chloride production - methane chlorination	Storage	407060	3.578 lb/ton product	Derived from site visit	13
Chloroform	67663	2869	Methylene chloride production - methyl chloride chlorination	Fugitive emissions	30112514	0.494 lb/ton product	Derived from site visit	13
Chloroform	67663	2869	Methylene chloride production - methyl chloride chlorination	Inert gas purge vent/product recovery condenser	301125	0.016 lb/ton product	Derived from site visit	13
Chloroform	67663	2869	Methylene chloride production - methyl chloride chlorination	Storage	407060	1.95 lb/ton product	Derived from site visit	13
Chloroform	67663	2869	Perchloroethylene and trichloroethylene production	Wastewater stripper	301125	0.24 lb/ton perchloroethylene produced	Controlled with 2 condensers, may not apply to all PCE/TCE plants, see reference	164
Chloroform	67663	2899	1,3-Diisocyanate production	Plantwide emissions		5.5 x 10E-4 lb/sec	Carbon adsorption	160
Chloroform	67663	2899	Oxybisphenoxarsine and 1,3-diisocyanate production	Deaeration of aqueous waste		0.0022 lb/s	Uncontrolled	160
Chloroform	67663	2899	Oxybisphenoxarsine production	Plantwide emissions		0.0018 lb/s	Carbon adsorption	160
Chloroform	67663	4911	Cooling towers, utility	Cooling towers - once through systems		0.00342 lb/10E6 gal cooling water	Uncontrolled	164
Chloroform	67663	4911	Cooling towers, utility	Cooling towers - recirculating systems		6.25 lb/10E6 gal cooling water	Uncontrolled	164
Chloroform	67663	4941	Wastewater treatment	Municipal wastewater		1.168 x 10E-7 lb/gal mun wastewater disc		164
Chloroform	67663	4941	Water treatment	Chlorination of drinking water, evaporation		3.42 x 10E-4 lb/10E3 gal water chlorinat		164
Chloroform	67663	4953	Landfill	Landfill gas	S	0.61 x 10E-6 volume/volume landfill gas	Average of highest values for 20 landfills in S. California	93
Chloroform	67663	4953	Sewage sludge incineration	Fluidized-bed furnace	50100506	0.00776 lb/ton dry sludge	One test, scrubber	191

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Chloroform	67663	4953	Sewage sludge incineration	Multiple hearth furnace	50100506	0.0072 lb/ton dry sludge	Average of six tests, scrubber	101
Chloroform	67663	4953	Wastewater treatment	POTW	50100701	1040 lb/ton of chloroform in influent	Based on mole, modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
Chloromethane	74873	2869	Acetaldehyde production	Off-gas vent	30112014	2.2 lb/ton acetaldehyde	Controlled, low pressure scrubber, data from one plant	143
Chloromethane	74873	2869	Chloromethane production - methane chlorination	Recycled methane inert gas purge vent	30112511	4.08 lb/ton total chloromethanes capac.	Uncontrolled, based on information supplied by one producer	71
Chloromethane	74873	2869	Chloromethane production - methanol/CH3Cl chlorination	Inert-gas purge vent for condenser assoc. w/ meth. chlor. prod. recov.	30112510	3 lb/ton total chloromethanes prod.	Uncontrolled, hypoth. fac. producing 25% methyl chloride, 48% MC, 25% chloroform, & 2% carbon tet.	72
Chloromethane	74873	4953	Sewage sludge incineration	Multiple hearth furnace	50100506	0.01032 lb/ton dry sludge	One test, scrubber	101
Chlorophenol	25167800	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	0.0002 lb/ton RDF combusted	100% RDF fuel only, ESP control only, one data point only	180
Chlorophenol	25167800	4953	Municipal waste combustion	Modular starved-air combustor	501001	3.6 x 10E-5 lb/ton feed	Uncontrolled, overall average of several source averages, range is 2.2 x 10E-5 - 5.8 x 10E-5 lb/ton	180
Chlorophenol	25167800	4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	9.2 x 10E-6 lb/ton feed	Capacity > 600 tons/day, ESP control only, overall average of several source averages, range is 8.0 x 10E-6 - 1.04 x 10E-5 lb/ton	180
Chlorophenol	25167800	4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	1.2 x 10E-5 lb/ton feed	Capacity > 600 tons/day, uncontrolled, one data point only, detection limit reported	180
Chlorophenol	25167800	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	0.00013 lb/ton feed	Capacity < 600 tons/day, ESP control only, overall average of several source averages, range is 4.4 x 10E-5 - 0.00026 lb/ton	180
Chlorophenol	25167800	4953	Municipal waste combustion	Mass burn waterwall combustor, built before 1980	501001	0.0012 lb/ton feed	ESP control only, overall average of several source averages, range is 3.6 x 10E-5 - 0.0019 lb/ton	180
2-Chlorophenol	95578	4953	Sewage sludge incineration	Fluidized-bed furnace	5010[illegible]506	<4 x 10E-5 lb/ton dry sludge	One test, scrubber	101
2-Chlorophenol	95578	4953	Sewage sludge incineration	Multiple hearth furnace	50100506	<2.4 x 10E-5 lb/ton dry sludge	One test, scrubber	101
2-Chlorophenol	95578	4953	Wastewater treatment	POTW	50100701	60 lb/ton 2-chlorophenol in influent	Based on mole, modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	60
Chlorophenols		4953	Municipal waste combustion	Existing mass burn heat recovery facility	501001	9.2 x 10E-4 lb/ton of waste combusted	Controlled by ESP, based on source tests	118

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Chlorophenols		4953	Municipal waste combustion	Existing mass burn heat recovery facility	501001	6 x 10E-5 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Chlorophenols		4953	Municipal waste combustion	Mass burn, nonheat recovery facility	501001	9.2 x 10E-4 lb/ton of waste combusted	Controlled by ESP, based on source tests	118
Chlorophenols		4953	Municipal waste combustion	Mass burn, nonheat recovery facility	501001	6 x 10E-5 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Chlorophenols		4953	Municipal waste combustion	Modular incinerator	501001	3.6 x 10E-5 lb/ton of waste combusted	Controlled by ESP, based on source tests	118
Chlorophenols		4953	Municipal waste combustion	Modular incinerator	501001	2 x 10E-6 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Chlorophenols		4953	Municipal waste combustion	Projected or state-of-the-art mass burn heat recovery facility	501001	3.6 x 10E-5 lb/ton of waste combusted	Controlled by ESP, based on source test	118
Chlorophenols		4953	Municipal waste combustion	Projected or state-of-the-art mass burn heat recovery facility	501001	2 x 10E-6 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Chlorophenols		4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	3.6 x 10E-4 lb/ton of waste combusted	Controlled by ESP, based on source tests	118
Chlorophenols		4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	2 x 10E-5 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Chloroprene	126998	2821	Polyvinyl chloride production	Suspension process, entire plant	30101801	<8 x 10E-5 lb/ton PVC	Based on a model plant, 1978 data, 1.5 x 10E8 lb capacity, control status not certain	138
Chloroprene	126998	2822	Neoprene manufacture	Batch polykettles	301026	2.2 lb/ton neoprene	Engineering Judgement	123
Chloroprene	126998	2822	Neoprene manufacture	Blend tanks	30102614	0.32 lb/ton neoprene	Engineering Judgement	123
Chloroprene	126998	2822	Neoprene manufacture	Chloroprene vent condenser	301026	0.018 lb/ton neoprene	Engineering Judgement	123
Chloroprene	126998	2822	Neoprene manufacture	Dryer exhaust	30102609	1.88 lb/ton neoprene	Engineering Judgement	123
Chloroprene	126998	2822	Neoprene manufacture	Emulsion storage tanks	30126	0.34 lb/ton neoprene	Engineering Judgement	123
Chloroprene	126998	2822	Neoprene manufacture	Heels tank	301026	0.022 lb/ton neoprene	Engineering Judgement	123
Chloroprene	126998	2822	Neoprene manufacture	Jet vent scrubber	301026	0.34 lb/ton neoprene	Engineering Judgement	123
Chloroprene	126998	2822	Neoprene manufacture	Recycle chloroprene tank	301026	0.006 lb/ton neoprene	Engineering Judgement	123

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Chloroprene	126998	2822	Neoprene manufacture	Refined chloroprene tanks	301026	0.226 lb/ton neoprene	Engineering judgement	123
Chloroprene	126998	2822	Neoprene manufacture	Strippers	30102611	1.26 lb/ton neoprene	Engineering judgement	123
Chloroprene	126998	2822	Neoprene manufacture	Tank car vents	30126	0.42 lb/ton neoprene	Engineering judgement	123
Chloroprene	126998	2822	Neoprene manufacture	Vacuum column jet	301026	0.58 lb/ton neoprene	Engineering judgement	123
Chloroprene	126998	2822	Neoprene manufacture	Vaporization from process wastewater	301026	0.07 lb/ton neoprene	Engineering judgement	123
Chloroprene	126998	2822	Neoprene manufacture	Wash belts	30126	0.058 lb/ton neoprene	Engineering judgement	123
Chromium	7440473		Coal combustion	Anthracite coal-fired cyclone boilers, util/cogenerc/industr	1	502-3720 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion	Anthracite coal-fired cyclone boilers, util/cogenerc/industr	1	290-2150 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion	Anthracite coal-fired cyclone boilers, util/cogenerc/industr	1	143-1060 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion	Anthracite coal-fired cyclone boilers, util/cogenerc/industr	1	41-305 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion	Anthracite coal-fired pulverized wet bottom boilers, util/cogenerc/ind	1	2420-3720 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion	Anthracite coal-fired pulverized wet bottom boilers, util/cogenerc/ind	1	1400-2150 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion	Anthracite coal-fired pulverized wet bottom boilers, util/cogenerc/ind	1	690-1060 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion	Anthracite coal-fired pulverized wet bottom boilers, util/cogenerc/ind	1	198-305 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion	Anthracite coal-fired stoker boilers, util/cogenerc/industr	1	2230-3720 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion	Anthracite coal-fired stoker boilers, util/cogenerc/industr	1	1290-2150 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Chromium	7440473		Coal combustion	Anthracite coal-fired stoker boilers, util/commerc/industr	1	636-1040 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion	Anthracite pulverized dry bottom boilers, util/commerc/industr	1	2970-3720 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion	Anthracite pulverized dry bottom boilers, util/commerc/industr	1	1710-2130 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion	Anthracite pulverized dry bottom boilers, util/commerc/industr	1	846-1060 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion	Anthracite pulverized dry bottom boilers, util/commerc/industr	1	244-305 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion	Bituminous coal-fired cyclone boiler, util/commerc/industr	1	212-1570 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion	Bituminous coal-fired cyclone boiler, util/commerc/industr	1	122-906 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion	Bituminous coal-fired cyclone boiler, util/commerc/industr	1	60-447 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion	Bituminous coal-fired cyclone boiler, util/commerc/industr	1	17-129 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion	Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	1250-1570 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion	Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	721-906 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion	Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	356-447 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion	Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	102-129 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Chromium	7440473		Coal combustion	Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	0.0034 lb/10E12 Btu	Utility boiler emissions of Cr+6 only, controlled with fabric filter, based on source test	34
Chromium	7440473		Coal combustion	Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	1020-1570 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Chromium	7440473		Coal combustion	Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	588-906 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Chromium	7440473		Coal combustion	Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	291-477 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Chromium	7440473		Coal combustion	Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	84-129 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	34
Chromium	7440473		Coal combustion	Bituminous coal-fired spreader stoker boilers, util/commerc/industr	1	942-1570 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Chromium	7440473		Coal combustion	Bituminous coal-fired spreader stoker boilers, util/commerc/industr	1	544-906 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Chromium	7440473		Coal combustion	Bituminous coal-fired spreader stoker boilers, util/commerc/industr	1	268-447 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Chromium	7440473		Coal combustion	Bituminous coal-fired spreader stoker boilers, util/commerc/industr	1	1.5-5.5 lb/10E12 Btu	Indus. & commercial boiler emis. of Cr+6 only, controlled with 2 mechan. opt in series, source test	34
Chromium	7440473		Coal combustion	Lignite coal-fired cyclone boilers, util/commerc/industr	1	253-1080 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Chromium	7440473		Coal combustion	Lignite coal-fired cyclone boilers, util/commerc/industr	1	144-1080 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Chromium	7440473		Coal combustion	Lignite coal-fired cyclone boilers, util/commerc/industr	1	72-936 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Chromium	7440473		Coal combustion	Lignite coal-fired cyclone boilers, util/commerc/industr	1	21-194 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	34

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Chromium	7440473		Coal combustion	Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	1500-1880 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion	Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	844-1080 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion	Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	428-536 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion	Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	123-154 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion	Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	1220-1880 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion	Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	704-1080 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion	Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	348-536 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion	Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	100-154 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion	Lignite coal-fired spreader stoker boilers, util/commerc/industr	1	1130-1880 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion	Lignite coal-fired spreader stoker boilers, util/commerc/industr	1	767-1080 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion	Lignite coal-fired spreader stoker boilers, util/commerc/industr	1	379-536 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Chromium	7440473		Coal combustion, residential	Anthracite coal-fired boilers		372 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion, residential	Bituminous coal-fired boilers		157 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion, residential	Boilers fired by coal from appalachian region		157 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion, residential	Boilers fired by coal from interior region		248 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion, residential	Boilers fired by coal from northern plains region		83.3 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion, residential	Boilers fired by coal from rocky mountain region		218 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion, residential	Lignite coal-fired boilers		188 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	36
Chromium	7440473		Coal combustion, residential	Subbituminous coal-fired boilers		156 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	36
Chromium	7440473		Cooling towers, industrial	Cooling towers with low efficiency drift eliminator		Ecr=.01890 x R x (CRo4 x .448)	Ecr= Cr emission rate - mg Cr/min, R=recircul rate of cool H2O l/min, CrO4=ppm conc. in recirculating H2O	209
Chromium	7440473		Cooling towers, industrial	Cooling towers with low efficiency drift eliminator		Ecr=.03349% x R x (CRo4 x .448)	Ecr= Cr emission rate - mg Cr/min, R=recircul rate of cool H2O l/min, CrO4=ppm conc. in recirculating H2O	209
Chromium	7440473		Cooling towers, industrial	Cooling towers with low efficiency drift eliminator		Ecr=.007% x R x (CRo4 x .448)	Ecr= Cr emission rate - mg Cr/min, R=recircul rate of cool H2O l/min, CrO4=ppm conc. in recirculating H2O	209
Chromium	7440473		Cooling towers, industrial	Cooling towers with low efficiency drift eliminator		Ecr=.01% x R x (CRo4 x .448)	Ecr= Cr emission rate - mg Cr/min, R=recircul rate of cool H2O l/min, CrO4=ppm conc. in recirculating H2O	209
Chromium	7440473		Cooling towers, industrial	Cooling towers with low efficiency drift eliminator		Ecr=.0318% x R x (CRo4 x .448)	Ecr= Cr emission rate - mg Cr/min, R=recircul rate of cool H2O l/min, CrO4=ppm conc. in recirculating H2O	209
Chromium	7440473		Cooling towers, industrial	Cooling towers with low efficiency drift eliminator		Ecr=.0267% x R x (CRo4 x .448)	Ecr= Cr emission rate - mg Cr/min, R=recircul rate of cool H2O l/min, CrO4=ppm conc. in recirculating H2O	209
Chromium	7440473		Cooling towers, industrial	Cooling towers with low efficiency drift eliminator		Ecr=(.0087%) x R x (CRo4 x .448)	Ecr= Cr emission rate - mg Cr/min, R=recircul rate of cool H2O l/min, CrO4=ppm conc. in recirculating H2O	209

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POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Chromium	7440473		Cooling towers, industrial	Cooling towers with low efficiency drift eliminator		Ecr=(.00375) x R x (CRo4 x .448)	Ecr= Cr emission rate - kg Cr/min, R=recircul rate of cool H20 l/min, CrO4=kgs conc. in recirculating H20	209
Chromium	7440473		Oil combustion	Distillate oil-fired boiler, util/comserc/industr/resi dential	1	47.5 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Chromium	7440473		Oil combustion	Distillate oil-fired boiler, util/comserc/industr/resi dential	1	27.8 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Chromium	7440473		Oil combustion	Distillate oil-fired boiler, util/comserc/industr/resi dential	1	13.92 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Chromium	7440473		Oil combustion	Distillate oil-fired boiler, util/comserc/industr/resi dential	1	3.84 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Chromium	7440473		Oil combustion	Residual oil-fired boiler, util/comserc/industr/resi dential	1	24 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Chromium	7440473		Oil combustion	Residual oil-fired boiler, util/comserc/industr/resi dential	1	12.18 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Chromium	7440473		Oil combustion	Residual oil-fired boiler, util/comserc/industr/resi dential	1	6.09 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Chromium	7440473		Oil combustion	Residual oil-fired boiler, util/comserc/industr/resi dential	1	1.68 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Chromium	7440473		Sewage sludge incineration	Fluidized-bed furnace	501	0.0002 - 0.0004 lbs/ton dry sludge	Controlled by wet scrubber	203
Chromium	7440473		Sewage sludge incineration	Fluidized-bed furnace	501	0.013 lbs/ton dry sludge	Uncontrolled emissions, single test	203
Chromium	7440473		Sewage sludge incineration	Multiple hearth furnace	501	0.007 - 0.63 lbs/ton dry sludge	Uncontrolled emissions, average of 5 tests was 0.21 lbs/ton	203

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Chromium	7440473		Sewage sludge incineration	Multiple hearth furnace	501	0.0003 - 0.0078 lbs/ton dry sludge	Controlled by wet scrubber, average of 8 tests was 0.0052 lbs/ton	203
Chromium	7440473		Waste oil combustion	Waste oil-fired boilers (<150 million Btu/h) or space heaters	1	0.175 lb/1000 gal oil burned	Uncontrolled, based on emissions data and engineering judgement, variable	55
Chromium	7440473		Wood combustion, residential	Woodstove without baffle		0.0018 lb/ton wood burned	Uncontrolled, based on one study, nonbaffled stove burning green pine	58
Chromium	7440473	226	Woven fabric finishing	Curing oven - resin finish	330001	5 x 10E-4 lb/ton fabric	Uncontrolled, average of three tests	52
Chromium	7440473	226	Woven fabric finishing	Heat setting	330001	3.4 x 10E-5 lb/ton fabric	Uncontrolled, based on test data, total chromium	52
Chromium	7440473	226	Woven fabric finishing	Tenter frames - resin finishing	330001	0.00106 lb/ton fabric	Uncontrolled, average of four tests	52
Chromium	7440473	226	Woven fabric finishing	Theraosol dyeing	330001	2.4 x 10E-4 lb/ton fabric	Uncontrolled, average of three tests, total chromium	52
Chromium	7440473	25	Wood combustion, industrial	Horizontal return tube	10200906	20.87 lb/10E12 Btu heat input	Sample results, 1 plant, wood flowrate = .514 kg/s, boiler has 3-pass design w/flyash reinjection, uncontrolled	176
Chromium	7440473	25	Wood combustion, industrial	Balanced draft wiches stoker-fired industrial boiler	10200906	0.0003 lb/ton fuel or 0.010 ng/J	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 kg/s, boil. eff. 55.3%	177
Chromium	7440473	25	Wood combustion, industrial	Balanced draft wiches stoker-fired industrial boiler	10200906	0.0003 lb/ton fuel or 0.014 ng/J	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.54 kg/s, boil. eff. 61.3%	177
Chromium	7440473	2819	Chromic acid production	Chromic acid filter	301	2.0 lb/ton raw material processed	Uncontrolled, as total chromium, likely to be Cr VI	141
Chromium	7440473	2819	Chromic acid production	Chromic acid filter	301	0.02 lb/ton raw material processed	Scrubber, as total chromium, likely to be Cr VI	141
Chromium	7440473	2819	Chromic acid production	Chromic acid reactor, melter, flaker	301	0.4 lb/ton raw material processed	Uncontrolled, as total chromium, likely to be Cr VI	141
Chromium	7440473	2819	Chromic acid production	Chromic acid reactor, melter, flaker	301	0.02 lb/ton raw material processed	Scrubber, as total chromium, likely to be Cr VI	141
Chromium	7440473	2819	Chromic acid production	Packaging	301	1.4 lb/ton raw material processed	Uncontrolled, as total chromium, likely to be Cr VI	141
Chromium	7440473	2819	Chromic acid production	Packaging	301	0.08 lb/ton raw material processed	Scrubber, as total chromium, likely to be Cr VI	141
Chromium	7440473	2951	Asphaltic concrete production	Plant stack	305002	1.24 x 10E-10 lb/ton concrete	Controlled (unspecified) from a single plant. Avg. of 2 values, range is 7.57 x 10E-11 - 1.71 x 10E-10 lb/ton	170

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Chromium	7440473	2951	Asphaltic concrete production	Plant stack	305002	1.21 x 10E-9 lb/ton	Uncontrolled from a single plant, avg. of 2 values, range is 1.10 x 10E-9 - 1.32 x 10E-9 lb/ton	170
Chromium	7440473	3241	Cement manufacture - dry process	Dryer/grinder	30500613	0.01 lb/ton cement produced	Uncontrolled, includes fuel emissions, as total chromium	161
Chromium	7440473	3241	Cement manufacture - dry process	Kiln	30500606	0.026 lb/ton cement produced	Includes fuel emissions, as total chromium, uncontrolled	161
Chromium	7440473	3241	Cement manufacture - dry process	Kiln	30500606	1.2 x 10E-5 lb/ton cement produced	Includes fuel emissions, as total chromium, ESP	161
Chromium	7440473	3241	Cement manufacture - dry process	kiln	30500606	1.0 x 10E-5 lb/ton cement produced	Includes fuel emissions, as total chromium, fabric filter	161
Chromium	7440473	3241	Cement manufacture - wet process	Clinker cooler	30500714	8 x 10E-6 lb/ton cement produced	Fabric filter, includes fuel, as total chromium	161
Chromium	7440473	3241	Cement manufacture - wet process	Clinker cooler	30500714	8 x 10E-6 lb/ton cement produced	Gravel bed, includes fuel, as total chromium	161
Chromium	7440473	3241	Cement manufacture - wet process	Clinker cooler	30500714	4 x 10E-6 lb/ton cement produced	Wet scrubber, includes fuel, as total chromium	161
Chromium	7440473	3241	Cement manufacture - wet process	Dryer/grinder	30500717	0.0034 lb/ton cement produced	Uncontrolled, includes fuel emissions, as total chromium	161
Chromium	7440473	3241	Cement manufacture - wet process	Kiln	30500706	0.024 lb/ton cement produced	Uncontrolled, includes fuel emissions, as total chromium	161
Chromium	7440473	3241	Cement manufacture - wet process	Kiln	30500706	2.2 10E-5 lb/ton cement produced	ESP, includes fuel emissions, as total chromium	161
Chromium	7440473	3241	Cement manufacture - wet process	Kiln	30500706	1.6 x 10E-5 lb/ton cement produced	Fabric filter, includes fuel emissions, as total chromium	161
Chromium	7440473	3297	Refractory production	Fusion casting: crush/size/dry	305	150 lb/ton refractory produced	Uncontrolled, as total chromium	161
Chromium	7440473	3297	Refractory production	Fusion casting: crush/size/dry	305	34 lb/ton refractory produced	Controlled (77%), as total chromium	161
Chromium	7440473	3297	Refractory production	Fusion melting/casting/breakout/ finishing	305	74 lb/ton refractory produced	Uncontrolled, as total chromium	161
Chromium	7440473	3297	Refractory production	Fusion melting/casting/breakout/ finishing	305	18 lb/ton refractory produced	Controlled (77%), as total chromium	161
Chromium	7440473	3297	Refractory production	Pressing process: brick firing kiln	305	0.2 lb/ton refractory produced	Uncontrolled, as total chromium	161

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POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Chromium	7440473	3297	Refractory production	Pressing process: ore crush/size/dry	305	150 lb/ton refractory produced	Uncontrolled, as total chromium, may overstate uncontrolled emissions	161
Chromium	7440473	3297	Refractory production	Pressing process: ore crush/size/dry	305	54 lb/ton refractory produced	Controlled (64%), as total chromium	161
Chromium	7440473	3297	Refractory production: chrome-magnesite brick	Dryer	305	0.0038 lb/ton raw material processed	Fabric filter, as total chromium, raw material is chrome ore and magnesite	161
Chromium	7440473	3297	Refractory production: chrome-magnesite brick	Ore store/grind/size	305	0.06 lb/ton raw material processed	Fabric filter, as total chromium, range 0.02-0.10, material is chrome ore only	161
Chromium	7440473	3297	Refractory production: chrome-magnesite brick	Press/fix: brick dryer	305	0.00074 lb/ton raw material processed	Scrubber, as total chromium, raw material is magnesite and chrome ore	161
Chromium	7440473	3297	Refractory production: chrome-magnesite brick	Press/fix: brick kiln	305	0.00088 lb/ton raw material processed	Scrubber, as total chromium, raw material is magnesite and chrome ore	161
Chromium	7440473	3297	Refractory production: chrome-magnesite brick	Press/fix: mixer	305	0.0028 lb/ton raw material processed	Fabric filter, as total chromium, raw material is magnesite and chrome ore	161
Chromium	7440473	3297	Refractory production: chrome-magnesite brick	Raw material storage silo	305	0.0054 lb/ton raw material processed	Fabric filter, as total chromium, raw material is chrome ore and magnesite	161
Chromium	7440473	3297	Refractory production: chromic oxide brick	Milling	305	0.96 lb/ton raw material processed	Wet scrubber, as total chromium, raw material is chromic oxide	161
Chromium	7440473	3297	Refractory production: chromic oxide brick	Mixer (pressing process)	305	0.96 lb/ton raw material processed	Wet scrubber, as total chromium, raw material is chromic oxide	161
Chromium	7440473	3297	Refractory production: chromic oxide brick	Spray dryer	305	0.96 lb/ton raw material processed	Fabric filter, as total chromium, raw material is chromic oxide	161
Chromium	7440473	3312	Steel production	Argon-oxygen decarburization vessel: stainless and specialty alloys	303009	1.06 lb/ton steel produced	Average of 0.43-0.62, as total chromium, after capture, before control	161
Chromium	7440473	3312	Steel production	Electric arc furnace: carbon and alloy steel	30300908	0.06 lb/ton steel produced	Average of 0.03-0.09, as total chromium, after capture, before control	161
Chromium	7440473	3312	Steel production	Electric arc furnace: mixed products	30300904	0.68 lb/ton steel produced	Average of 0.34-1.0, total chromium, after capture, before control	161
Chromium	7440473	3312	Steel production	Electric arc furnace: stainless and specialty	30300904	3.2 lb/ton steel produced	Average of 1.6-4.8, total chromium, after capture, before control	161
Chromium	7440473	3313	Ferroalloy production	Electric arc furnace, open, ferromanganese	30300701	0.028 lb/mw-hr energy consumed by furnace	Uncontrolled	169
Chromium	7440473	3313	Ferroalloy production	Electric arc furnace, semi-sealed, ferrosilicon	30300702	0.012 lb/mw-hr energy consumed by furnace	Uncontrolled	169

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POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Chromium	7440473	3313	Ferrochromium production by electric arc furnace process	Casting, ferrochrome-silicon product	30300617	0.072 lb/ton product	Composite of controlled and uncontrolled sources, as total chromium	161
Chromium	7440473	3313	Ferrochromium production by electric arc furnace process	Casting, high-carbon ferrochrome product	30300617	0.14 lb/ton product	Composite of controlled and uncontrolled sources, as total chromium	161
Chromium	7440473	3313	Ferrochromium production by electric arc furnace process	Closed furnace, ferrochrome-silicon product	30300702	4.4 x 10E-5 lb/Mwhr	Scrubber, as total chromium, assumes chromium is 0.4% of controlled PM	161
Chromium	7440473	3313	Ferrochromium production by electric arc furnace process	Crushing/grinding, ferrochrome-silicon product	303004	0.22 lb/ton product	Composite of controlled and uncontrolled sources, as total chromium	161
Chromium	7440473	3313	Ferrochromium production by electric arc furnace process	Crushing/grinding, high-carbon ferrochrome product	303004	0.42 lb/ton product	Composite of controlled and uncontrolled sources, as total chromium	161
Chromium	7440473	3313	Ferrochromium production by electric arc furnace process	Dry, crush, size ore	30300611	0.48 lb/ton ore processed	Composite of controlled and uncontrolled, as total chromium	161
Chromium	7440473	3313	Ferrochromium production by electric arc furnace process	Furnace, chrome ore/lime melt	30300704	1.38 lb/Mwhr	Uncontrolled, as total chromium, assumes chromium is 15% of PM by weight	161
Chromium	7440473	3313	Ferrochromium production by electric arc furnace process	Furnace, ferrochrome-silicon product	30300704	1.102 lb/Mwhr	Average of 0.2-0.78 range, as total Cr uncontrolled, assumes Cr is 0.4-1.4% of PM emissions by wt.	161
Chromium	7440473	3313	Ferrochromium production by electric arc furnace process	Furnace, high-carbon ferrochrome and charge Cr product	30300704	8.59 lb/Mwhr	Uncontrolled, as total chromium, assumes chromium is 14% of PM by weight	161
Chromium	7440473	3313	Ferrochromium production by electric arc furnace process	Open furnace, ferrochrome-silicon product	30300401	0.007 lb/Mwhr	Scrubber, as total chromium, assumes 0.4% total controlled PM is chromium	161
Chromium	7440473	3313	Ferrochromium production by electric arc furnace process	Open furnace, ferrochrome-silicon product	30300401	0.001 lb/Mwhr	Fabric filter, controlled chromium, assumes 0.4% total controlled PM is chromium	161
Chromium	7440473	3313	Ferrochromium production by electric arc furnace process	Open furnace, high-carbon ferrochrome and charge Cr product	303004	0.132 lb/Mwhr	Scrubber, as total chromium, assumes 14% PM is chromium by weight	161
Chromium	7440473	3313	Ferrochromium production by electric arc furnace process	Open furnace, high-carbon ferrochrome product	303004	0.004 lb/Mwhr	Fabric filter, as total chromium, assumes 14% PM is chromium by weight	161

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Chromium	7440473	3313	Ferrochromium production by electric arc furnace process	Open furnace, high-carbon ferrochrome product	303006	0.088 lb/Mwhr	ESP, as total chromium, assumes 14% PM is chromium by weight	161
Chromium	7440473	3313	Ferrochromium production by electric arc furnace process	Receipt/store ore in stock pile	30300613	0.48 lb/ton ore processed	Composite of controlled and uncontrolled, as total chromium	161
Chromium	7440473	3313	Ferrochromium production by electric arc furnace process	Treat molten alloy with Cl in ladle, high-carbon ferrochrome product	303006	4.4 lb/ton product	Composite of controlled and uncontrolled sources, as total chromium	161
Chromium	7440473	3313	Ferrochromium production by electric arc furnace process	Treating molten alloy with Cl in ladle, ferrochrome-silicon product	303006	3.4 lb/ton product	Composite of controlled and uncontrolled, as total chromium	161
Chromium	7440473	3313	Ferrochromium production by electric arc furnace process	Weigh/feed ore to electric arc furnace	30300614	0.42 lb/ton ore processed	Composite of controlled and uncontrolled, as total chromium	161
Chromium	7440473	3339	Chromite ore refining	Chromite ore dryer	303	0.01 lb/ton ore processed	Bag collector, as total chromium, likely Cr III	161
Chromium	7440473	3339	Chromite ore refining	Chromite ore dryer	303	0.002 lb/ton ore processed	Wet scrubber (assumed 99%), as total chromium, likely Cr III	161
Chromium	7440473	3339	Chromite ore refining	Hardinge mill and cyclone	303	0.006 lb/ton ore processed	Fabric filter, as total chromium, likely Cr III	161
Chromium	7440473	3339	Chromite ore refining	Refined ore storage	303	0.1 lb/ton ore processed	Uncontrolled, as total chromium, likely Cr III	161
Chromium	7440473	3339	Chromite ore refining	Refined ore storage	303	0.0001 lb/ton ore processed	Dust collector, as total chromium, likely Cr III	161
Chromium	7440473	34	Chrome plating, decorative	Plating tank	30901001	9.7 x 10E-8 lb/hr/amp	Total chrome, ave. of 3 values, based on current (amperes) used, used fluorocarbon fume suppressant	135
Chromium	7440473	34	Chrome plating, decorative	Plating tank	30901001	0.01025 lb/hr/ft2	Total chrome, ave. of 3 values, based on surface area of tank, used fluorocarbon fume suppressant	135
Chromium	7440473	34	Chrome plating, decorative	Plating tank	30901001	2.6 x 10E-8 lb/hr/amp	Hex chrome, ave. of 3 values, based on current (amperes) used, used fluorocarbon fume suppressant	135
Chromium	7440473	34	Chrome plating, decorative	Plating tank	30901001	0.00246 lb/hr/ft2	Hex chrome, ave. of 3 values, based on surface area of tank, used fluorocarbon fume suppressant	135
Chromium	7440473	34	Chrome plating, hard	Plating tank	30901001	5.7 x 10E-6 ft/hr/amp	Total chrome, average of 3 values, based on amperes used, uncontrolled	135
Chromium	7440473	34	Chrome plating, hard	Plating tank	30901001	5.33 lb/hr/ft2	Total chrome, ave. of 3 values, based on tank surface area, uncontrolled	135

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Chromium	7440473	34	Chrome plating, hard	Plating tank	30901001	1.06 x 10E-5 lb/hr/amp	Total chrome, average factor for uncontrolled plating tanks	135
Chromium	7440473	3471	Chrome plating, decorative	Chromic acid anodizing tank	30901001	0.002 - 0.006 lb/hr	Estimated by mass balance, uncontrolled, based on tank capacity.	209
Chromium	7440473	3471	Chrome plating, decorative	Chromic acid anodizing tank	30901001	0.00012 lb/hr/sq ft surface area	Estimated by mass balance, uncontrolled, based on tank surface area	209
Chromium	7440473	3471	Chrome plating, hard	Plating tank	30901001	1.64 x 10E-4 lb/hr/ft2 tank area	Range 5.33 x 10E-5 - 8.2 x 10E-4 and 8.82 x 10E-5 - 2.46 x 10E-4, as Cr 6+, uncontrolled	161
Chromium	7440473	4911	Cooling towers, utility	Fresh water cooling tower	38600701	5.7 lb/10E12 Btu	Drift loss range of 0.1-0.2%, based on source tests, as total chromium	161
Chromium	7440473	4911	Cooling towers, utility	Fresh water cooling tower	38600701	0.139 lb/10E12 Btu	Drift loss range of 0.0002-0.005%, based on source tests, as total chromium	161
Chromium	7440473	4953	Municipal waste combustion	Incinerator stack	501001	0.004 lb/ton munic. solid waste-dry wt.	Controlled by spray-baffle scrubber, based on material balance for model incinerator	98
Chromium	7440473	4953	Municipal waste combustion	Multiple hearth furnace	50100101	0.0078 lb/ton solid waste incinerated	Refuse only, wet scrubber, total chromium	161
Chromium	7440473	4953	Municipal waste combustion	Multiple hearth furnace	50100101	0.0092 lb/ton solid waste incinerated	Refuse and sludge, wet scrubber, total chromium	161
Chromium	7440473	4953	Municipal waste combustion	Rocking bar grate	501001	0.0048 lb/ton solid waste incinerated	Wet scrubber, total chromium	161
Chromium	7440473	4953	Municipal waste combustion	Traveling grate	501001	0.0004 lb/ton solid waste incinerated	ESP, total chromium	161
Chromium	7440473	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	0.022 lb/ton RDF coebusted	100% RDF fuel only, ESP control, overall average of several source averages, range is 0.0009 - 0.044 lb/ton	180
Chromium	7440473	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	0.013 lb/ton RDF coebusted	100% RDF fuel only, uncontrolled, overall average of several source averages, range is 0.0094 - 0.0164 lb/ton	180
Chromium	7440473	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	0.00066 lb/ton RDF coebusted	Spray drying after gas and PM ctrl, ovrall avg of several source averages, 100% RDF fuel only, range is 3.4 x 10E-5 - 0.0013 lb/ton	180
Chromium	7440473	4953	Municipal waste combustion	Modular starved-air coebustor	501001	0.0002 lb/ton feed	ESP only, overall average of several source averages, range is 2.8 x 10E-5 - 0.00038 lb/ton	180
Chromium	7440473	4953	Municipal waste combustion	Modular starved-air coebustor	501001	0.0016 lb/Mg feed	Uncontrolled, overall average of several source averages, range is 3.4 x 10E-5 - 0.0072 lb/ton	180
Chromium	7440473	4953	Municipal waste combustion	Modular excess-air coebustor	501001	0.003 lb/ton feed	ESP control only, one data point only	180

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Chromium	7440473	4953	Municipal waste combustion	Modular excess-air combustor	501001	2 x 10E-9 lb/ton feed	Dry sorbent injection after acid gas and PM control, one data point only	180
Chromium	7440473	4953	Municipal waste combustion	Mass burn, water wall incinerator	501001	0.007 lb/ton feed	Uncontrolled, one data point only	180
Chromium	7440473	4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	0.00012 lb/ton feed	Capacity > 400 tons/day, ESP control only, overall average of several source averages, range is 3.4 x 10E-5 - 0.0002 lb/ton	180
Chromium	7440473	4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	0.022 lb/ton feed	Capacity > 400 tons/day, uncontrolled, one data point only	180
Chromium	7440473	4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	0.00070 lb/ton feed	Capacity > 400 tons/day, spray drying after acid gas and PM control, overall avg. of several source avgs., range is 0.00044 - 0.00096 lb/ton	180
Chromium	7440473	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	0.003 lb/ton feed	Capacity < 400 tons/day, uncontrolled, one data point only.	180
Chromium	7440473	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	0.00013 lb/ton feed	Capacity < 400 tons/day, ESP control only, overall average of several source averages, range is 6.4 x 10E-5 - 0.00020 lb/ton	180
Chromium	7440473	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	0.0040 lb/ton feed	Cap. <400 tons/day, spray drying after acid gas and PM control, overall avg. of several source avgs., range is 1.8 x 10E-4 - 0.0080 lb/ton	180
Chromium	7440473	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	3.4 x 10E-6 lb/ton feed	Capacity < 400 tons/day, dry sorbent injection after acid gas and PM control, one data point only	180
Chromium	7440473	4953	Municipal waste combustion	Mass burn waterwall combustor, built before 1980	501001	0.0016 lb/ton feed	ESP control only, overall average of several source averages, range is 0.00058 - 0.0026 lb/ton	180
Chromium	7440473	4953	Municipal waste combustion	Mass burn waterwall combustor, built before 1980	501001	0.016 lb/ton feed	Uncontrolled, overall average of several source averages, range is 0.0036 - 0.030 lb/ton	180
Chromium	7440473	4953	Municipal waste combustion	Mass burn, refractory facility	501001	2.6 x 10E-5 lb/ton feed	Spray drying after acid gas and PM control, one data point only	180
Chromium	7440473	4953	Municipal waste combustion	Mass burn, refractory facility	501001	0.016 lb/ton feed	Uncontrolled, one data point only	180
Chromium	7440473	4953	Sewage sludge incineration	Fluidized bed	50100506	0.0006 lb/ton solid waste incinerated	Wet scrubber, as total chromium	161

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Chromium	7440473	4953	Sewage sludge incineration	Fluidized-bed furnace	50100506	9.2 x 10E-4 lb/ton dry sludge	Average of three tests, scrubber, total chromium	101
Chromium	7440473	4953	Sewage sludge incineration	Multiple hearth furnace	50100506	0.00808 lb/ton dry sludge	Average of 13 tests, scrubber, total chromium	101
Chromium	7440473	4953	Sewage sludge incineration	Multiple hearth incinerator	50100506	0.0154 lb/ton solid waste incinerated	Controlled, as total chromium	161
Chromium	7440473	806	Hospital waste incineration	Incinerator	50200505	7.22 x 10E-4 lb/ton	Uncontrolled, test data, total chromium	167
Chromium (Cr 6+)	18540299	34	Chrome plating, hard	Plating tank	30901001	2.88 x 10E-6 lb/hr/amp	Average of 3 values, based on amperes used, uncontrolled	135
Chromium (Cr 6+)	18540299	34	Chrome plating, hard	Plating tank	30901001	2.44 x 10E-4 lb/hr/ft2	Average of 3 values, based on tank surface area, uncontrolled	135
Chromium (Cr 6+)	18540299	3471	Chrome plating, decorative	Plating tank	30901001	1.0 x 10E-8 lb/amp hr	Average of six tests, controlled by foam blanket fume suppressant with wetting agent, range is 7 x 10E-9 - 1.3 x 10E-8 lb/amp hr	209
Chromium (Cr 6+)	18540299	3471	Chrome plating, decorative	Plating tank	30901001	3.6 x 10E-6 lb/amp hr	Average of six tests, uncontrolled, range is 2.9 x 10E-6 to 4.4 x 10E-6 lb/amp hr	209
Chromium (Cr 6+)	18540299	3471	Chrome plating, hard	Chromic acid anodizing tank	30901001	0.00191 lb/hr/ft2 tank area	Uncontrolled	161
Chromium (Cr 6+)	18540299	3471	Chrome plating, hard	Plating tank	30901001	1.08 x 10E-7 lb/amp hr	Average of six tests, controlled by double packed-bed scrubber followed by chevron blades.	209
Chromium (Cr 6+)	18540299	3471	Chrome plating, hard	Plating tank	30901001	3.08 x 10E-7 lb/amp hr	Average of eleven tests, controlled by single packed-bed scrubber	209
Chromium (Cr 6+)	18540299	3471	Chrome plating, hard	Plating tank	30901001	1.23 x 10E-6 lb/amp hr	Average of three tests, controlled by double packed-bed scrubber	209
Chromium (Cr 6+)	18540299	3471	Chrome plating, hard	Plating tank	30901001	1.76 x 10E-7 lb/amp hr	Average of three tests, controlled by mesh pad mist eliminator w/2sets of chevron blades followed by 2 pads	209
Chromium (Cr 6+)	18540299	3471	Chrome plating, hard	Plating tank	30901001	3.96 x 10E-7 lb/amp hr	Average of three tests, controlled by mesh pad mist eliminator - one mesh pad	209
Chromium (Cr 6+)	18540299	3471	Chrome plating, hard	Plating tank	30901001	6.8 x 10E-8 - 1.54 x E-7 lb/amp hr	Range of five tests, controlled by mesh pad mist eliminator - two pads	209
Chromium (Cr 6+)	18540299	3471	Chrome plating, hard	Plating tank	30901001	3.30 x 10E-7 lb/amp hr	Average of three tests, controlled by Chevron-blade misteliminators-double set blades	209
Chromium (Cr 6+)	18540299	3471	Chrome plating, hard	Plating tank	30901001	5.9 x 10E-7 - 1.2 x 10E-6 lb/amp hr	Range of four tests, controlled by Chevron-blade mist eliminators - single set blades	209

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Chromium (Cr 6+)	18540299	3471	Chrome plating, hard	Plating tank	30901001	2.02 x 10E-5 lb/sqr hr	Uncontrolled, average of 10 data sets covering 44 tests. range is 22 x 10E-6 to 4.95 x 10E-5	209
Chromium (Cr 6+)	18540299	4953	Municipal waste combustion	Mass burn, refractory facility	501001	0.83 lb/ton controlled particulate emis.	Controlled by ESP, based on source tests	118
Chromium (Cr 6+)	18540299	4953	Municipal waste combustion	Mass burn, water wall incinerator	501001	18.952 lb/ton controlled particulate emi	Controlled by ESP, based on source tests	118
Chromium (Cr 6+)	18540299	4953	Municipal waste combustion	Modular incinerator	501001	1.436 lb/ton controlled particulate emis	Controlled by ESP, based on source tests	118
Chromium (Cr 6+)	18540299	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	21.824 lb/ton controlled partic. emis.	Controlled by ESP, based on source tests	118
Chromium (VI) oxide (1:3)	1333820	3312	Steel production	Electric arc furnace - melting/refining	30300908	0 - 9.6 lbs/ton specialty steel	Uncontrolled emissions	198
Chromium (VI) oxide (1:3)	1333820	3312	Steel production	AOD vessel - melt and refine cycle	303009	1.82 lbs/ton specialty steel	Uncontrolled emissions	198
Chromium (VI) oxide (1:3)	1333820	3312	Steel production	Electric arc furnace - charge and tap cycle	30300908	0 - 0.28 lbs/ton specialty steel	Uncontrolled emissions	198
Chromium (VI) oxide (1:3)	1333820	332	Iron foundries	Electric arc furnace - charge and tap cycle	30400304	0.014-0.098 lbs/ton of iron produced	Uncontrolled emissions	184
Chromium (VI) oxide (1:3)	1333820	332	Iron foundries	Electric arc furnace - melting/refining	30400304	0.14-0.98 lbs/ton of iron produced	Uncontrolled emissions	184
Chrysene	218019		Scrap tire, open burning	Tires in experimental burn hut		0.260 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter compnt. shred condition = 1" by 2" piece, burn rate=1.3 kg/hr, controlled	212
Chrysene	218019		Scrap tire, open burning	Tires in experimental burn hut		0.109 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter compnt. shred condition = 2" by 2" piece, burn rate=1.1 kg/hr, controlled	212
Chrysene	218019		Scrap tire, open burning	Tires in experimental burn hut		0.174 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter compnt. shred condition = 2" by 2" piece, burn rate=1.7 kg/hr, controlled	212
Chrysene	218019		Scrap tire, open burning	Tires in experimental burn hut		0.109 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter compnt. shred condition = 2" by 2" piece, burn rate=2.3 kg/hr, controlled	212
Chrysene	218019	25	Wood combustion, industrial	Balanced draft w/ches stoker-fired industrial boiler	10200906	1 x 10E-9 lb/ton	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.54 kg/s, boil. eff. 61.3%	177
Coal tar creosote	8001589	4741	Rail tank car cleaning	Entire process	49003	9.18 lb/tank car	Emission measurement	97

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Cobalt	7440484		Wood combustion, residential	Woodstove without baffle		1.2 x 10E-4 lb/ton wood burned	Uncontrolled, based on one study, nonbaffled stove burning green pine	58
Cobalt	7440484	226	Woven fabric finishing	Curing oven - resin finish	330001	3.6 x 10E-5 lb/ton fabric	Uncontrolled, average of three tests	52
Cobalt	7440484	226	Woven fabric finishing	Heat setting	330001	3.4 x 10E-5 lb/ton fabric	Uncontrolled, based on test data	52
Cobalt	7440484	226	Woven fabric finishing	Tenter frames - resin finishing	330001	1.72 x 10E-4 lb/ton fabric	Uncontrolled, average of four tests	52
Cobalt	7440484	226	Woven fabric finishing	Thermosol dyeing	330001	1.02 x 10E-5 lb/ton fabric	Uncontrolled, average of three tests	52
Cobalt	7440484	25	Wood combustion, industrial	Balanced draft wiches stoker-fired industrial boiler	10200906	0.0002 lb/ton fuel or 0.007 ng/J	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 kg/s, boil. eff. 55.3%	177
Cobalt	7440484	25	Wood combustion, industrial	Balanced draft wiches stoker-fired industrial boiler	10200906	1.76 x 10E-5 lb/ton fuel or 0.0007 ng/J	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.54 kg/s, boil. eff. 61.3%	177
Cobalt	7440484	4953	Municipal waste combustion	Incinerator stack	501001	0.0001 lb/ton munic. solid waste-dry wt	Controlled by spray-baffle scrubber, based on material balance for model incinerator	98
Coke oven emissions		3312	Coke production, by-product recovery process	Coke ovens - charging	30300303	0.1 to 1.10 lb/ton coal	For 3-5 mins. uncontrolled charging	29
Coke oven emissions		3312	Coke production, by-product recovery process	Coke ovens - doors	30300308	0.26 to 0.5 lb/ton coal	For 30 to 75% leaking doors	29
Coke oven emissions		3312	Coke production, by-product recovery process	Coke ovens - lids	30300314	0.004-0.04 lb/ton coal	For 20 to 40% leaking lids	29
Coke oven emissions		3312	Coke production, by-product recovery process	Coke ovens - offtakes	30300314	0.004-0.04 lb/ton coal	For 20 to 40% leaking offtakes	29
Copper	7440508		Coal combustion	Anthracite coal-fired cyclone boilers, util/commerc/industr	1	161-927 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Anthracite coal-fired cyclone boilers, util/commerc/industr	1	95-550 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Anthracite coal-fired cyclone boilers, util/commerc/industr	1	24 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Copper	7440508		Coal combustion	Anthracite coal-fired overfeed stoker boilers, util/comm/ind	1	1080-1490 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Anthracite coal-fired overfeed stoker boilers, util/comm/ind	1	645-881 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Anthracite coal-fired overfeed stoker boilers, util/comm/ind	1	142-223 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Anthracite coal-fired pulverized dry bottom boilers, util/comm/ind	1	927 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Anthracite coal-fired pulverized dry bottom boilers, util/comm/ind	1	550 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Anthracite coal-fired pulverized dry bottom boilers, util/comm/ind	1	212 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Anthracite coal-fired pulverized dry bottom boilers, util/comm/ind	1	26 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Anthracite coal-fired pulverized wet bottom boilers, util/comm/ind	1	626-927 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Anthracite coal-fired pulverized wet bottom boilers, util/comm/ind	1	372-550 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Anthracite coal-fired pulverized wet bottom boilers, util/comm/ind	1	94 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Anthracite coal-fired spreader stoker boilers, util/comm/industr	1	490-1080 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Anthracite coal-fired spreader stoker boilers, util/comm/industr	1	290-645 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Anthracite coal-fired spreader stoker boilers, util/comm/industr	1	73-142 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Copper	7440508		Coal combustion	Bituminous coal-fired cyclone boiler, util/cogenerc/industr	1	147-848 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Bituminous coal-fired cyclone boiler, util/cogenerc/industr	1	87-503 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Bituminous coal-fired cyclone boiler, util/cogenerc/industr	1	22 lb/10E12 Btu	Controlled with ESP, based on source tests	36
Copper	7440508		Coal combustion	Bituminous coal-fired overfeed stoker boiler, util/cogenerc/industr	1	987-1360 lb/10E12 Btu	Uncontrolled, based on calculated and measured emission factors	36
Copper	7440508		Coal combustion	Bituminous coal-fired overfeed stoker boiler, util/cogenerc/industr	1	590-806 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Bituminous coal-fired overfeed stoker boiler, util/cogenerc/industr	1	148-204 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Bituminous coal-fired pulverized dry bottom boilers, util/cogenerc/ind	1	848 lb/10E12 Btu	Uncontrolled, based on source tests	36
Copper	7440508		Coal combustion	Bituminous coal-fired pulverized dry bottom boilers, util/cogenerc/ind	1	503 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Bituminous coal-fired pulverized dry bottom boilers, util/cogenerc/ind	1	194 lb/10E12 Btu	Controlled with ESP, based on source tests	36
Copper	7440508		Coal combustion	Bituminous coal-fired pulverized dry bottom boilers, util/cogenerc/ind	1	24 lb/10E12 Btu	Controlled with scrubber, based on source tests	36
Copper	7440508		Coal combustion	Bituminous coal-fired pulverized wet bottom boilers, util/cogenerc/ind	1	573-848 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Bituminous coal-fired pulverized wet bottom boilers, util/cogenerc/ind	1	340-503 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Bituminous coal-fired pulverized wet bottom boilers, util/cogenerc/ind	1	84 lb/10E12 Btu	Controlled with ESP, based on source tests	36

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Copper	7440508		Coal combustion	Bituminous coal-fired spreader stoker boilers, util/cogenerc/industr	1	448-987 lb/10E12 Btu	Uncontrolled, based on source tests	36
Copper	7440508		Coal combustion	Bituminous coal-fired spreader stoker boilers, util/cogenerc/industr	1	265-590 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Bituminous coal-fired spreader stoker boilers, util/cogenerc/industr	1	67-148 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Lignite coal-fired cyclone boilers, util/cogenerc/industr	1	258-1490 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Lignite coal-fired cyclone boilers, util/cogenerc/industr	1	153-884 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Lignite coal-fired cyclone boilers, util/cogenerc/industr	1	39 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Lignite coal-fired overfeed stoker boiler, util/cogenerc/industr	1	1730-2390 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Lignite coal-fired overfeed stoker boiler, util/cogenerc/industr	1	1040-1420 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Lignite coal-fired overfeed stoker boiler, util/cogenerc/industr	1	260-358 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Lignite coal-fired pulverized dry bottom boiler, util/cogenerc/industr	1	1490 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Lignite coal-fired pulverized dry bottom boiler, util/cogenerc/industr	1	884 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Lignite coal-fired pulverized dry bottom boiler, util/cogenerc/industr	1	341 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Copper	7440508		Coal combustion	Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	42 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	1010-1490 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	597-884 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	151 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Lignite coal-fired spreader stoker boilers, util/commerc/industr	1	787-1730 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Lignite coal-fired spreader stoker boilers, util/commerc/industr	1	465-1040 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Copper	7440508		Coal combustion	Lignite coal-fired spreader stoker boilers, util/commerc/industr	1	118-260 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Copper	7440508		Coal combustion, residential	Anthracite coal-fired boilers		129 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	36
Copper	7440508		Coal combustion, residential	Bituminous coal-fired boilers		136 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	36
Copper	7440508		Coal combustion, residential	Boilers fired by coal from appalachian region		157 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Copper	7440508		Coal combustion, residential	Boilers fired by coal from interior region		140 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Copper	7440508		Coal combustion, residential	Boilers fired by coal from northern plains region		109 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Copper	7440508		Coal combustion, residential	Boilers fired by coal from rocky mountain region		153 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Copper	7440508		Coal combustion, residential	Lignite coal-fired boilers		239 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	36
Copper	7440508		Coal combustion, residential	Subbituminous coal-fired boilers		119 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	36
Copper	7440508		Oil combustion	Distillate oil-fired boiler, util/commerc/industr/residential	1	280 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Copper	7440508		Oil combustion	Distillate oil-fired boiler, util/commerc/industr/residential	1	165.2 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Copper	7440508		Oil combustion	Distillate oil-fired boiler, util/commerc/industr/residential	1	42 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Copper	7440508		Oil combustion	Distillate oil-fired boiler, util/commerc/industr/residential	1	25.2 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Copper	7440508		Oil combustion	Residual oil-fired boiler, util/commerc/industr/residential	1	278 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Copper	7440508		Oil combustion	Residual oil-fired boiler, util/commerc/industr/residential	1	165.2 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Copper	7440508		Oil combustion	Residual oil-fired boiler, util/commerc/industr/residential	1	42.0 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Copper	7440508		Oil combustion	Residual oil-fired boiler, util/commerc/industr/residential	1	25.2 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Copper	7440508		Wood combustion, residential	Woodstove without baffle		3.4 x 10E-4 lb/ton wood burned	Uncontrolled, based on one study, nonbaffled stove burning green pine	58
Copper	7440508	1011	Iron ore processing	Entire process	303	0.001 lb/ton ore processed	Controlled, based on assumed copper content and PM factors	53

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Copper	7440508	1021	Copper ore milling/processing	Entire process	303	0.004 lb/ton ore processed	Controlled, average of estimates for about 30 plants	83
Copper	7440508	226	Woven fabric finishing	Curing oven - resin finish	330001	0.001 lb/ton fabric	Uncontrolled, average of three tests	82
Copper	7440508	226	Woven fabric finishing	Heat setting	330001	1.22 x 10E-5 lb/ton fabric	Uncontrolled, based on test data	82
Copper	7440508	226	Woven fabric finishing	Tenter frames - resin finishing	330001	5.2 x 10E-4 lb/ton fabric	Uncontrolled, average of four tests	82
Copper	7440508	226	Woven fabric finishing	Thermosol dyeing	330001	0.008 lb/ton fabric	Uncontrolled, average of three tests	82
Copper	7440508	25	Wood combustion, industrial	Horizontal return tube	10200906	44.06 lb/10E12 Btu heat input	Sample results, 1 plant, wood flowrate = .514 kg/s, boiler has 3-pass design w/flyash reinjection, uncontrolled	176
Copper	7440508	25	Wood combustion, industrial	Balanced draft wickes stoker-fired industrial boiler	10200906	0.0004 lb/ton fuel or 0.014 ng/J	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 kg/s, boil. eff. 88.3%	177
Copper	7440508	25	Wood combustion, industrial	Balanced draft wickes stoker-fired industrial boiler	10200906	0.001 lb/ton fuel or 0.049 ng/J	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.54 kg/s, boil. eff. 61.3%	177
Copper	7440508	2819	Copper sulfate production	Entire process	301	2.52 lb/ton produced	Engineering Judgement	83,97
Copper	7440508	2895	Carbon black manufacture - oil furnace	Main process purge vent	30108504	0.002 lb/ton carbon black produced	Uncontrolled, copper content 0.45%, total trace elements 0.50 lb/ton	83,97
Copper	7440508	3312	Iron and steel production	Basic oxygen furnace operations, Q-BOP process melting/refining	303009	0.01 lb/ton steel produced	Uncontrolled, copper content 0.03%	83,97
Copper	7440508	3312	Iron and steel production	Basic oxygen furnace operations, Q-BOP process melting/refining	303009	0.00004 lb/ton steel produced	Open hood, vented to ESP	83,97
Copper	7440508	3312	Iron and steel production	Basic oxygen furnace operations, charging	30300916	0.0002 lb/ton hot metal	At source, copper content 0.03%	83,97
Copper	7440508	3312	Iron and steel production	Basic oxygen furnace operations, tapping	30300917	0.0004 lb/ton steel	At source, copper content 0.03%	83,97
Copper	7440508	3312	Iron and steel production	Blast furnace	30300822	0.002 lb/ton hot metal	Uncontrolled, average copper content 0.25, range 0.05%-0.5%	83,97
Copper	7440508	3312	Iron and steel production	Electric arc furnace - melting/refining	30300908	0.1 lb/ton steel produced	Uncontrolled, copper content 0.26%, carbon steel	83,97

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Copper	7440508	3312	Iron and steel production	Electric arc furnace operations, charging/tapping/slagging	30300906	0.004 lb/ton steel	Uncontrolled, copper content 0.265%, carbon steel	53,97
Copper	7440508	3312	Iron and steel production	Open hearth furnace operations, melting/refining	30300901	0.04 lb/ton steel	Uncontrolled, copper content 0.16%	53,97
Copper	7440508	3312	Iron and steel production	Open hearth furnace operations, melting/refining	30300901	0.0004 lb/ton steel	Controlled - ESP, copper content 0.16	53,97
Copper	7440508	3312	Iron and steel production	Sinter plants/sinter discharge	30300814	0.004 lb/ton finished sinter	Uncontrolled, copper content 0.104%	53,97
Copper	7440508	3312	Iron and steel production	Sinter plants/sinter discharge	30300814	0.0001 lb/ton finished sinter	Baghouse, copper content 0.104%	53,97
Copper	7440508	3312	Iron and steel production	Sintering operations, windbox exhaust	30300813	0.008 lb/ton finished sinter	Uncontrolled, after coarse PM removal, copper content 0.104%	53,97
Copper	7440508	3312	Iron and steel production	Sintering operations, windbox exhaust	30300813	0.00018 lb/ton finished sinter	Wet ESP, copper content 0.104%	53,97
Copper	7440508	3313	Ferroalloy production	FeMn (80%)	30300615	0.012 lb/ton alloy	Uncontrolled, open furnace	53,97
Copper	7440508	3313	Ferroalloy production	FeSi (50%)	30300601	0.032 lb/ton alloy	Uncontrolled, open/closed furnace, baghouse achieves 98%	53,97
Copper	7440508	3313	Ferroalloy production	FeSi (75%)	30300602	0.1 lb/ton alloy	Uncontrolled, open/closed furnace, baghouse achieves 98%	53,97
Copper	7440508	3313	Ferroalloy production	FeSi (90%)	30300603	0.22 lb/ton alloy	Uncontrolled, open furnace	53,97
Copper	7440508	3313	Ferroalloy production	Electric arc furnace, open, ferromanganese	30300701	0.018 lb/Mw-hr energy consumed by furnace	Uncontrolled	169
Copper	7440508	3321	Iron foundries	Cupola	30400301	0.0034 lb/ton gray iron produced	Uncontrolled, copper content 0.02%, PM factors	53
Copper	7440508	3331	Primary copper smelting	Concentrate dryer	303005	0.1 lb/ton conc. ore processed	Uncontrolled, assume 1% Cu, PM factors, acid plant achieves 99% control, Cu content range <1-47%	53,97
Copper	7440508	3331	Primary copper smelting	Converter	30300504	0.036 lb/ton conc. ore processed	Uncontrolled, assume 0.1% copper, PM factors, acid plant or ESP achieves 99% control	53,97
Copper	7440508	3331	Primary copper smelting	Electric furnace	30300510	1.0 lb/ton conc. ore processed	Uncontrolled, assume 1% Cu, PM factors, ESP achieves 99% control, Cu content range <1-47%	53,97
Copper	7440508	3331	Primary copper smelting	Flash furnace	30300512	1.4 lb/ton conc. ore processed	Uncontrolled, assume 1% Cu, PM factors, acid plant achieves 99% control, Cu content range <1-47%	53,97

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Copper	7440508	3331	Primary copper smelting	Multiple hearth roaster	30300502	0.44 lb/ton conc. ore processed	Controlled, based on assumed Cu content & PM fac., ESP achieves 99% control, assume Cu content 1% wt	93,97
Copper	7440508	3331	Primary copper smelting	Reverberatory furnace	30300507	0.5 lb/ton conc. ore processed	Controlled, based on assumed Cu content & PM fac., ESP achieves 99% control, assume Cu content 1% wt	93,97
Copper	7440508	3339	Primary lead smelting	Blast furnace	30301002	0.0016 lb/ton Pb produced	Controlled, copper content 0.29%	93
Copper	7440508	3339	Primary lead smelting	Refining furnace	303010	1.36 x 10E-5 lb/ton Pb produced	Controlled, copper content 0.04%	93
Copper	7440508	3339	Primary lead smelting	Sintering	30301001	0.002 lb/ton Pb produced	Controlled, copper content 2%	93
Copper	7440508	3339	Primary zinc (slab) production	Roaster - electrolytic plant	303030	9.0 lb/ton In produced	Controlled, copper content 3.7%	93
Copper	7440508	3339	Primary zinc (slab) production	Roaster - pyrometallurgical plant	303030	9.0 lb/ton In produced	Controlled, copper content 3.7%	93
Copper	7440508	3339	Primary zinc (slab) production	Sintering - pyrometallurgical plant	303030	0.004 lb/ton In produced	Controlled, copper content 0.04%	93
Copper	7440508	3339	Primary zinc (slab) production	Vertical retorts - pyrometallurgical plant	30303005	0.002 lb/ton In produced	Controlled, copper content 0.014%	93
Copper	7440508	3341	Secondary copper smelting	Cupola - insulated copper wire	30400211	1.2 lb/ton material charged	Uncontrolled, copper content 0.5%	93,97
Copper	7440508	3341	Secondary copper smelting	Cupola - insulated copper wire	30400211	0.05 lb/ton material charged	ESP, copper content 0.5%	93,97
Copper	7440508	3341	Secondary copper smelting	Cupola - scrap copper/brass	30400212	0.36 lb/ton material charged	Uncontrolled, estimated copper 0.5%	93,97
Copper	7440508	3341	Secondary copper smelting	Cupola - scrap copper/brass	30400212	0.012 lb/ton material charged	Estimated copper 0.5%, ESP	93,97
Copper	7440508	3341	Secondary copper smelting	Reverberatory furnace - brass/bronze	30400215	3.4 lb/ton material charged	None, copper content 9.9%	93,97
Copper	7440508	3341	Secondary copper smelting	Reverberatory furnace - brass/bronze	30400215	0.26 lb/ton material charged	Baghouse, copper content 9.9%	93,97
Copper	7440508	4953	Municipal waste combustion	Incinerator stack	501001	0.018 lb/ton munic. solid waste-dry wt.	Controlled by spray-baffle scrubber, based on material balance for model incinerator	98
Copper	7440508	4953	Sewage sludge incineration	Fluidized-bed furnace	50100504	6.2 x 10E-4 lb/ton dry sludge	One test, scrubber	101
Copper	7440508	4953	Sewage sludge incineration	Multiple hearth furnace	50100504	0.0218 lb/ton dry sludge	Average of five tests, scrubber	101

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Copper oxide	1317380	3312	Steel production	AOD vessel - melt and refine cycle	303009	0.064 lbs/ton specialty steel	Uncontrolled emissions	198
Copper oxide	1317380	3312	Steel production	Electric arc furnace - charge and tap cycle	30300908	0.0016 - 0.002 lbs/ton carbon steel	Uncontrolled emissions	198
Copper oxide	1317380	3312	Steel production	Electric arc furnace - melting/refining	30300908	0.015 - 0.04 lbs/ton carbon steel	Uncontrolled emissions	198
Copper oxide	1317380	332	Iron foundries	Electric arc furnace - charge and tap cycle	30400304	0.014-0.056 lbs/ton of iron produced	Uncontrolled emissions	184
Copper oxide	1317380	332	Iron foundries	Electric arc furnace - melting/refining	30400304	0.14-0.56 lbs/ton of iron produced	Uncontrolled emissions	184
2-Cresol	95487	4953	Wastewater treatment	POTW	50100701	12 lb/ton o-cresol in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
4-Cresol	106445	4953	Wastewater treatment	POTW	50100701	1.8 lb/ton p-cresol in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
Crotylaldehyde	4170303	2865	Acetone/phenol manufacture from cumene	Cleavage section vents (combined)	30120211	1.7 x 10E-7 lb/ton phenol	Controlled (unspecified), based on test data, 1977 data, average factors	125
Crotylaldehyde	4170303	2865	Acetone/phenol manufacture from cumene	Cumene peroxidation vent	30120202	0.011 lb/ton phenol	Controlled (not specified), based on sampling, 1977 data, average factors	125
Cumene	98828	286	Cumene production	Fugitive emission - flanges	30115680	0.0024 lb/hr	Uncontrolled emission factor	214
Cumene	98828	286	Cumene production	Fugitive emission - sampling connections	30115680	0.033 lb/hr	Uncontrolled emission factor	214
Cumene	98828	286	Cumene production	Fugitive emission - compressors	30115680	0.502 lb/hr	Uncontrolled emission factor	214
Cumene	98828	286	Cumene production	Fugitive emission - open-ended lines	30115680	0.0055 lb/hr	Uncontrolled emission factor	214
Cumene	98828	286	Cumene production	Fugitive emission - gas pressure relief devices	30115680	0.2292 lb/hr	Uncontrolled emission factor	214
Cumene	98828	286	Cumene production	Fugitive emission - valves	30115680	0.00051 lb/hr	Uncontrolled emission factor for a heavy liquid	214
Cumene	98828	286	Cumene production	Fugitive emission - valves	30115680	0.0132 lb/hr	Uncontrolled emission factor for a light liquid	214
Cumene	98828	286	Cumene production	Fugitive emission - valves	30115680	0.154 lb/hr	Uncontrolled emission factor for a gas	214

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POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Cumene	98828	286	Cumene production	Fugitive emission - pump seals	30115480	0.0297 lb/hr	Uncontrolled emission factor for a heavy liquid	214
Cumene	98828	286	Cumene production	Fugitive emission - pump seals	30115480	0.0396 lb/hr	Uncontrolled emission factor for a light liquid	214
Cumene	98828	2869	Acetone/phenol manufacture from cumene	Cleavage section vents (combined)	30109151	0.28 lb/ton phenol produced	Controlled (condensation), based on engineering judgement	15
Cumene	98828	2869	Acetone/phenol manufacture from cumene	Cumene peroxidation vent	30109151	1.72 lb/ton phenol produced	Controlled (adsorption or condensation), based on industry sources	15
Cumene	98828	2869	Acetone/phenol manufacture from cumene	Storage tank vents combined	30109151	0.056 lb/ton phenol produced	Controlled (floating roof), based on engineering judgement	15
1,3-Cyclopentadiene	542927		Scrap tire, open burning	Tires in experimental burn hut		0.081 lb/ton tire	VOST samples burn rate = 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
1,3-Cyclopentadiene	542927		Scrap tire, open burning	Tires in experimental burn hut		0.190 lb/ton tire	VOST samples burn rate = 3.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
1,3-Cyclopentadiene	542927		Scrap tire, open burning	Tires in experimental burn hut		0.136 lb/ton tire	VOST samples burn rate = 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
1,3-Cyclopentadiene	542927		Scrap tire, open burning	Tires in experimental burn hut		0.020 lb/ton tire	VOST samples burn rate = 2.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
1,3-Cyclopentadiene	542927		Scrap tire, open burning	Tires in experimental burn hut		0.148 lb/ton tire	VOST samples burn rate = 6.43 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Dibenz(a,h)anthracene	53703		Scrap tire, open burning	Tires in experimental burn hut		0.004 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter compnt. shred condition = 2" by 2" piece, burn rate=1.7 kg/hr, controlled	212
Dibenzofuran	132649	4953	Municipal waste combustion	Existing mass burn heat recovery facility	501001	1.92 x 10E-6 lb/ton of waste combusted	Controlled by ESP, based on source tests, emissions = 2,3,7,8-TCDD equivalent	118
Dibenzofuran	132649	4953	Municipal waste combustion	Existing mass burn heat recovery facility	501001	1.2 x 10E-7 lb/ton of waste combusted	Dry alk. scrubber & fabric filter contr., assumes 95% contr. effic., emis. = 2,3,7,8-TCDD equiv.	118
Dibenzofuran	132649	4953	Municipal waste combustion	Existing refuse-derived fuel facility	501001	4 x 10E-6 lb/ton of waste combusted	Controlled by ESP, based on source tests, emissions = 2,3,7,8-TCDD equivalent	118
Dibenzofuran	132649	4953	Municipal waste combustion	Existing refuse-derived fuel facility	501001	2 x 10E-7 lb/ton of waste combusted	Dry alk. scrubber & fabric filter contr., assumes 95% contr. effic., emis. = 2,3,7,8-TCDD equiv.	118
Dibenzofuran	132649	4953	Municipal waste combustion	Mass burn, nonheat recovery facility	501001	6.2 x 10E-6 lb/ton of waste combusted	Controlled by ESP, based on source tests, emissions = 2,3,7,8-TCDD equivalent	118
Dibenzofuran	132649	4953	Municipal waste combustion	Mass burn, nonheat recovery facility	501001	4 x 10E-7 lb/ton of waste combusted	Dry alk. scrubber & fabric filter contr., assumes 95% contr. effic., emis. = 2,3,7,8-TCDD equiv.	118

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Dibenzofuran	132649	4953	Municipal waste combustion	Modular incinerator	501001	1.38 x 10E-7 lb/ton of waste combusted	Controlled by ESP, based on source tests, emissions = 2,3,7,8-TCDD equivalent	118
Dibenzofuran	132649	4953	Municipal waste combustion	Modular incinerator	501001	8 x 10E-9 lb/ton of waste combusted	Dry alk. scrubber & fabric filter contr., assumes 95% contr. effic., emis. = 2,3,7,8-TCDD equiv.	118
Dibenzofuran	132649	4953	Municipal waste combustion	Projected or state-of-the-art mass burn heat recovery facility	501001	1.16 x 10E-7 lb/ton of waste combusted	Controlled by ESP, based on source tests, emissions = 2,3,7,8-TCDD equivalent	118
Dibenzofuran	132649	4953	Municipal waste combustion	Projected or state-of-the-art mass burn heat recovery facility	501001	8 x 10E-9 lb/ton of waste combusted	Dry alk. scrubber & fabric filter contr., assumes 95% contr. effic., emis. = 2,3,7,8-TCDD equiv.	118
Dibenzofuran	132649	4953	Municipal waste combustion	Projected or state-of-the-art refuse-derived fuel facility	501001	2.4 x 10E-6 lb/ton of waste combusted	Controlled by ESP, based on source tests, emissions = 2,3,7,8-TCDD equivalent	118
Dibenzofuran	132649	4953	Municipal waste combustion	Projected or state-of-the-art refuse-derived fuel facility	501001	1.6 x 10E-7 lb/ton of waste combusted	Dry alk. scrubber & fabric filter contr., assumes 95% contr. effic., emis. = 2,3,7,8-TCDD equiv.	118
Dibenzofuran	132649	4953	Wastewater treatment	POTW	50100701	1940 lb/ton dibenzofuran in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	60
1,2-Dibromoethane	106934	421	Tank truck transport	Tank truck loaded with product - extreme losses	406001	4.8 x 10E-7 lb/1000 gal transported	Calculated from gasoline vapor estimates	50
1,2-Dibromoethane	106934	421	Tank truck transport	Tank truck loaded with product - typical losses	406001	4.8 x 10E-8 lb/1000 gal transported	Calculated from gasoline vapor estimates	50
1,2-Dibromoethane	106934	421	Tank truck transport	Tank truck unloaded - extreme losses	406001	2.11 x 10E-6 lb/1000 gal transported	Calculated from gasoline vapor estimates	50
1,2-Dibromoethane	106934	421	Tank truck transport	Tank truck unloaded - typical losses	406001	6.24 x 10E-7 lb/1000 gal transported	Calculated from gasoline vapor estimates	50
1,2-Dibromoethane	106934	4953	Wastewater treatment	POTW	50100701	1480 lb/ton of eth. dibromide in influen	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
1,2-Dibromoethane	106934	5171	Gasoline loading of tank trucks at bulk plants	Splash loading - dedicated normal service	404002	1.37 x 10E-4 lb/10E3 gal throughput	Calculated from gasoline vapor estimates	50
1,2-Dibromoethane	106934	5171	Gasoline loading of tank trucks at bulk plants	Splash loading - vapor balance service	404002	9.43 x 10E-5 lb/10E3 gal throughput	Calculated from gasoline vapor estimates	50
1,2-Dibromoethane	106934	5171	Gasoline loading of tank trucks at bulk plants	Submerged loading - dedicated normal service	404002	5.67 x 10E-5 lb/10E3 gal throughput	Calculated from gasoline vapor estimates	50

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
1,2-Dibromoethane	106934	5171	Gasoline loading of tank trucks at bulk plants	Submerged loading - vapor balance service	404002	9.43 x 10E-5 lb/10E3 gal throughput	Calculated from gasoline vapor estimates	50
1,2-Dibromoethane	106934	5171	Gasoline loading of tank trucks at bulk terminals	Splash loading - dedicated normal service	404001	1.37 x 10E-4 lb/10E3 gal transferred	Calculated from gasoline vapor estimates	50
1,2-Dibromoethane	106934	5171	Gasoline loading of tank trucks at bulk terminals	Splash loading - vapor balance service	404001	9.43 x 10E-5 lb/10E3 gal transferred	Calculated from gasoline vapor estimates	50
1,2-Dibromoethane	106934	5171	Gasoline loading of tank trucks at bulk terminals	Submerged loading - dedicated normal service	404001	5.67 x 10E-5 lb/10E3 gal transferred	Calculated from gasoline vapor estimates	50
1,2-Dibromoethane	106934	5171	Gasoline loading of tank trucks at bulk terminals	Submerged loading - vapor balance service	404001	9.43 x 10E-5 lb/10E3 gal transferred	Calculated from gasoline vapor estimates	50
1,2-Dibromoethane	106934	5171	Gasoline storage at bulk plants	Storage tanks - breathing loss	404002	3.07 x 10E-9 lb/10E3 gal throughput	Calculated from gasoline vapor estimates	50
1,2-Dibromoethane	106934	5171	Gasoline storage at bulk plants	Storage tanks - draining losses	404002	2.30 x 10E-9 lb/10E3 gal throughput	Calculated from gasoline vapor estimates	50
1,2-Dibromoethane	106934	5171	Gasoline storage at bulk plants	Storage tanks - filling losses	404002	5.86 x 10E-9 lb/10E3 gal throughput	Calculated from gasoline vapor estimates	50
1,2-Dibromoethane	106934	5171	Gasoline storage at bulk terminals	Fixed-roof storage tanks - breathing losses	404001	2.44 x 10E-6 lb/10E3 gal throughput	Calculated from gasoline vapor estimates	50
1,2-Dibromoethane	106934	5171	Gasoline storage at bulk terminals	Fixed-roof storage tanks - working losses	404001	9.46 x 10E-6 lb/10E3 gal throughput	Calculated from gasoline vapor estimates	50
1,2-Dibromoethane	106934	5171	Gasoline storage at bulk terminals	Floating-roof storage tanks - storage losses	404001	2.66 x 10E-6/10E3 gal throughput	Calculated from gasoline vapor estimates	50
1,2-Dibromoethane	106934	5171	Gasoline storage at bulk terminals	Floating-roof storage tanks - working losses	404001	1.93 x 10E-12 lb/10E3 gal throughput	Calculated from gasoline vapor estimates	50
1,2-Dibromoethane	106934	5541	Gasoline blending at refineries	Storage and handling of EDB and blended gasoline	403	0.000148 lb/1000 gal leaded gas produced	Engineering estimate using an emission factor for EDC	50,51
1,2-Dibromoethane	106934	5541	Gasoline marketing activities	Refueling operations - displacement losses (controlled)	406004	1.43 x 10E-5 lb/1000 gal throughput	Calculated from gasoline vapor estimates	97
1,2-Dibromoethane	106934	5541	Gasoline marketing activities	Refueling operations - displacement losses (uncontrolled)	406004	1.43 x 10E-4 lb/1000 gal throughput	Calculated from gasoline vapor estimates	97
1,2-Dibromoethane	106934	5541	Gasoline marketing activities	Refueling operations - spillage	406004	8.48 x 10E-6 lb/1000 gal throughput	Calculated from gasoline vapor estimates	97
1,2-Dibromoethane	106934	5541	Gasoline storage at service stations	Balanced submerged filling of underground tanks	40400306	3.84 x 10E-6 lb/1000 gal throughput	Calculated from gasoline vapor estimates	97

POLLUTANT	CAS NUMBER	STC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
1,2-Dibromoethane	106934	5541	Gasoline storage at service stations	Splash filling of underground tanks	40600301	1.49 x 10E-4 lb/1000 gal throughput	Calculated from gasoline vapor estimates	97
1,2-Dibromoethane	106934	5541	Gasoline storage at service stations	Submerged filling of underground tanks	40600302	9.51 x 10E-5 lb/1000 gal throughput	Calculated from gasoline vapor estimates	97
1,2-Dibromoethane	106934	5541	Gasoline storage at service stations	Tank breathing and emptying	406003	1.3 x 10E-5 lb/1000 gal throughput	Calculated from gasoline vapor estimates	97
Dibutyl phthalate	84742	226	Woven fabric finishing	Heat setting	330001	8.2 x 10E-4 lb/ton fabric	Uncontrolled, based on test data	92
Dibutyl phthalate	84742	226	Woven fabric finishing	Tenter frames - resin finish	330001	0.0028 lb/ton fabric	Uncontrolled, test data	92
1,2-Dichlorobenzene	95501	2834	Pharmaceutical manufacture	Process emissions	301060	0.280 lb/ton 1,2-dichlorobenzene used	Mass balance (industry wide)	48
1,2-Dichlorobenzene	95501	2865	Dichloroaniline(3,4) production	Fugitive emissions	301	0.6 lb/ton 3,4-dichloroaniline produced	General estimates, no specifics on control	48
1,2-Dichlorobenzene	95501	2865	Dichloroaniline(3,4) production	Process emissions	301	3.1 lb/ton 3,4-dichloroaniline produced	General estimates, no specifics on control	48
1,2-Dichlorobenzene	95501	2865	Dichloroaniline(3,4) production	Storage tank emissions	407060	0.3 lb/ton 3,4-dichloroaniline produced	General estimates, no specifics on control	48
1,2-Dichlorobenzene	95501	2865	Dichlorobenzene(1,2) production	Fugitive emissions	301301	1.52 lb/ton 1,2-dichlorobenzene produced	Based on data from site visit, no specifics on controls, likely to be high value	48
1,2-Dichlorobenzene	95501	2865	Dichlorobenzene(1,2) production	Process emissions	301301	4.44 lb/ton 1,2-dichlorobenzene produced	Based on data from site visit, no specifics on controls, likely to be high value	48
1,2-Dichlorobenzene	95501	2865	Dichlorobenzene(1,2) production	Storage tank emissions	407060	0.94 lb/ton 1,2-dichlorobenzene produced	Based on data from site visit, no specifics on controls, likely to be high value	48
1,4-Dichlorobenzene	106467	2865	Dichlorobenzene(1,4) production	Fugitive emissions	301301	2.04 lb/ton product produced	Estimate based on data from site visits, specifics on control not available, likely to be high value	48
1,4-Dichlorobenzene	106467	2865	Dichlorobenzene(1,4) production	Process emissions	301301	11.62 lb/ton product produced	Estimate based on data from site visits, specifics on control not available, likely to be high value	48
1,4-Dichlorobenzene	106467	2865	Dichlorobenzene(1,4) production	Storage tank emissions	407060	0.82 lb/ton product produced	Estimate based on data from site visits, specifics on control not available, likely to be high value	48
1,2-Dichlorobenzene	95501	2865	Dye synthesis	Fugitive emissions	301121	0.1 lb/ton dye produced	General estimate, no specifics on controls	48

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
1,2-Dichlorobenzene	95501	2865	Dye synthesis	Process emissions	301121	0.80 lb/ton dye produced	General estimate, no specifics on controls	48
1,2-Dichlorobenzene	95501	2865	Dye synthesis	Storage tank emissions	407	0.1 lb/ton dye produced	General estimate, no specifics on controls	48
1,2-Dichlorobenzene	95501	4741	Rail tank car cleaning	Entire process	49003	0.1662 lb/tank car	Emission measurement	97
1,4-Dichlorobenzene	106467	4953	Sewage sludge incineration	Fluidized-bed furnace	50100504	<3.8 x 10E-5 lb/ton dry sludge	One test, scrubber	101
1,4-Dichlorobenzene	106467	4953	Sewage sludge incineration	Multiple hearth furnace	50100504	0.012138 lb/ton dry sludge	One test, scrubber	101
1,3-Dichlorobenzene	541731	4953	Sewage sludge incineration	Fluidized-bed furnace	50100504	<3.8 x 10E-5 lb/ton dry sludge	One test, scrubber	101
1,3-Dichlorobenzene	541731	4953	Sewage sludge incineration	Multiple hearth furnace	50100504	0.0026 lb/ton dry sludge	Average of two tests, scrubber	101
1,2-Dichlorobenzene	95501	4953	Sewage sludge incineration	Fluidized-bed furnace	50100504	<3.8 x 10E-5 lb/ton dry sludge	One test, scrubber	101
1,2-Dichlorobenzene	95501	4953	Sewage sludge incineration	Multiple hearth furnace	50100506	0.0034 lb/ton dry sludge	Average of two tests, scrubber	101
1,4-Dichlorobenzene	106467	4953	Wastewater treatment	POTW	50100701	780 lb/ton 1,4-dichlorobenz. in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	40
1,3-Dichlorobenzene	541731	4953	Wastewater treatment	POTW	50100701	1900 lb/ton 1,3-dichlorobenz. in influen	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	40
1,2-Dichlorobenzene	95501	4953	Wastewater treatment	POTW	50100701	820 lb/ton 1,2-dichlorobenz. in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	89
Dichlorobenzene (mixed isomers)	25321226	226	Woven fabric finishing	Curing oven - resin finish	330001	1.28 x 10E-4 lb/ton fabric	Uncontrolled, one test	92
Dichlorobenzene (mixed isomers)	25321226	226	Woven fabric finishing	Tenter frames - resin finishing	330001	0.032 lb/ton fabric	Test at one plant	92
Dichlorobenzene (mixed isomers)	25321226	226	Woven fabric finishing	Thermosol dyeing	330001	0.0032 lb/ton fabric	Uncontrolled, one test	92
Dichlorobenzene (mixed isomers)	25321226	2869	Chlorobenzene prod. (mono- & di-), direct chlorination	Absorption	30112535	0.002 lb/ton produced	Control uncertain, based on tests and mass balance	98
Dichlorodibenzodioxins, total		4953	Sewage sludge incineration	Multiple hearth furnace	50100506	1.39 x 10E-7 lb/ton dry sludge	Average of two tests, scrubber	101

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Dichlorodibenzofurans, total		4953	Sewage sludge incineration	Multiple hearth furnace	50100506	5.474 x 10E-7 lb/ton dry sludge	Average of two tests, scrubber	101
1,2-Dichloroethane	107062		Internal combustion engines - mobile	Motor vehicles	2	1.168 x 10E-5 lb/ton leaded gas burned	Calculated based on engineering judgement	51
1,2-Dichloroethane	107062	2821	Polyvinyl chloride production	Suspension process, entire plant	30101801	8 x 10E-5 lb/ton PVC	Based on a model plant, 1978 data, 1.5 x 10E8 lb capacity, control status not certain	138
1,2-Dichloroethane	107062	2822	Polysulfide rubber production	Entire process	30102601	67.6 lb/ton polysulfide rubber produced	Controlled, based on engineering judgement	51
1,1-Dichloroethane	75343	2869	Ethyl chloride production by hydrochlorination	Separation unit	301125	12 lb/ton produced	Control uncertain, based on mass balance and tests	95
1,2-Dichloroethane	107062	2869	Ethyl chloride production by hydrochlorination of ethylene	Process vents	30112515	18.9 lb/ton ethyl chloride produced	Control status unspecified, aggregate estimate based on national emissions and production estimates	51
1,2-Dichloroethane	107062	2869	Ethylene amine production	Entire process	301034	18.18 lb/ton ethylene amine produced	Facilities using typical controls for 1976, aggregate est. based on national emis. & produc. est.	51
1,2-Dichloroethane	107062	2869	Ethylene dichloride production - balanced process	Column vents	301125	6 lb/ton EDC produced	Uncontrolled, based on hypothetical plant with total EDC production capacity of 8.82 x 10E8 lb/yr	51
1,2-Dichloroethane	107062	2869	Ethylene dichloride production - balanced process	Column vents	301125	<0.12 lb/ton EDC produced	Controlled by thermal oxidizer, hypothetical plant w/ total EDC produc. cap. of 8.82 x 10E8 lb/yr	51
1,2-Dichloroethane	107062	2869	Ethylene dichloride production - balanced process	Direct chlorination vent	30112502	2.16 lb/ton EDC produced	Uncontrolled, based on hypothetical plant with total EDC production capacity of 8.82 x 10E8 lb/yr	51
1,2-Dichloroethane	107062	2869	Ethylene dichloride production - balanced process	Direct chlorination vent	30112502	<0.0432 lb/ton EDC produced	Controlled by thermal oxidizer, hypothetical plant w/ total EDC produc. cap. of 8.82 x 10E8 lb/yr	51
1,2-Dichloroethane	107062	2869	Ethylene dichloride production - balanced process	Direct chlorination vent	30112502	0.324-0.52 lb/ton EDC produced	Controlled by refrig. condens., hypothetical plant w/ total EDC produc. cap. of 8.82 x 10E8 lb/yr	51
1,2-Dichloroethane	107062	2869	Ethylene dichloride production - balanced process	Oxychlorination, air process, absorber/stripper	30112501	6.48-7.16 lb/ton of EDC produced	Uncontrolled, based on hypothetical plant with total EDC production capacity of 8.82 x 10E8 lb/yr	51
1,2-Dichloroethane	107062	2869	Ethylene dichloride production - balanced process	Oxychlorination, air process, absorber/stripper	30112501	<0.1296 lb/ton EDC produced	Controlled by thermal oxidizer, hypothetical plant w/ total EDC produc. cap. of 8.82 x 10E8 lb/yr	51
1,2-Dichloroethane	107062	2869	Ethylene dichloride production - balanced process	Oxychlorination, air process, absorber/stripper	30112501	<0.56 lb/ton EDC produced	Controlled by cataly. oxidizer, hypothetical plant w/ total EDC produc. cap. of 8.82 x 10E8 lb/yr	51

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
1,2-Dichloroethane	107062	2869	Ethylene dichloride production - balanced process	Oxychlorination, air process, refrigerated condenser	30112501	4.8 lb/ton EDC produced	Uncontrolled, based on hypothetical plant with total EDC production capacity of 0.82 x 10E8 lb/yr	51
1,2-Dichloroethane	107062	2869	Ethylene dichloride production - balanced process	Oxychlorination, air process, refrigerated condenser	30112501	<0.096 lb/ton EDC produced	Controlled by thermal oxidizer, hypothetical plant w/ total EDC produc. cap. of 0.82 x 10E8 lb/yr	51
1,2-Dichloroethane	107062	2869	Ethylene dichloride production - balanced process	Oxychlorination, oxygen process	30112501	0.924 lb/ton EDC produced	Uncontrolled, based on hypothetical plant with total EDC production capacity of 0.82 x 10E8 lb/yr	51
1,2-Dichloroethane	107062	2869	Ethylene dichloride production - balanced process	Oxychlorination, oxygen process	30112501	<0.0184 lb/ton EDC produced	Controlled by thermal oxidizer, hypothetical plant w/ total EDC produc. cap. of 0.82 x 10E8 lb/yr	51
1,2-Dichloroethane	107062	2869	Ethylene dichloride production - balanced process	Oxychlorination, oxygen process	30112501	0.1384-0.34 lb/ton EDC produced	Controlled by refrig. condens., hypothetical plant w/ total EDC produc. cap. of 0.82 x 10E8 lb/yr	51
1,2-Dichloroethane	107062	2869	Ethylene dichloride production - balanced process	Process fugitive emissions	301125	0.53 lb/ton of EDC produced	Uncontrolled, based on hypothetical plant with total EDC production capacity of 0.82 x 10E8 lb/yr	51
1,2-Dichloroethane	107062	2869	Ethylene dichloride production - balanced process	Process fugitive emissions	301125	0.212 lb/ton EDC produced	Major leak detection and correction, hypothetical plant w/ total EDC prod. cap. of 0.82 x 10E8 lb/yr	51
1,2-Dichloroethane	107062	2869	Ethylene dichloride production - balanced process	Secondary wastewater biotreatment	301125	0.004-0.12 lb/ton EDC produced	Uncontrolled, based on biotreater emission data reported by two EDC production facilities	51
1,2-Dichloroethane	107062	2869	Ethylene dichloride production - balanced process	Storage vents, in-process	30112	0.0298 lb/ton EDC produced	Uncontrolled, based on hypothetical plant with total EDC production capacity of 0.82 x 10E8 lb/yr	51
1,2-Dichloroethane	107062	2869	Ethylene dichloride production - balanced process	Storage vents, in-process	301125	<0.0006 lb/ton EDC produced	Controlled by thermal oxidizer, hypothetical plant w/ total EDC produc. cap. of 0.82 x 10E8 lb/yr	51
1,2-Dichloroethane	107062	2869	Ethylene dichloride production - balanced process	Storage vents, in-process	301125	0.0044 lb/ton EDC produced	Controlled by refrig. condens., based on hypothetical plant w/ total EDC prod. cap. - 0.82 x 10E8 lb	51
1,2-Dichloroethane	107062	2869	Ethylene dichloride production - balanced process	Storage vents, produced	301125	0.1466 lb/ton EDC produced	Uncontrolled, based on hypothetical plant with total EDC production capacity of 0.82 x 10E8 lb/yr	51
1,2-Dichloroethane	107062	2869	Ethylene dichloride production - balanced process	Storage vents, produced	301125	<0.003 lb/ton EDC produced	Controlled by thermal oxidizer, hypothetical plant w/ total EDC produc. cap. of 0.82 x 10E8 lb/yr	51

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
1,2-Dichloroethane	107062	2869	Ethylene dichloride production - balanced process	Storage vents, produced	301125	0.022 lb/ton EDC produced	Controlled by refrig. condens., hypothetical plant w/ total EDC produc. cap. of 8.82 x 10E8 lb/yr	51
1,1-Dichloroethane	75343	2869	Ethylene dichloride production - oxyhydrochlorination	Separation unit	30112501	0.008 lb/ton produced	Control unclear, based on mass balance and testing	95
1,1-Dichloroethane	75343	2869	Methyl chloroform production by hydrochlorination	Heat transfer	30112525	17 lb/ton produced	Control uncertain, based on mass balance and tests	95
1,1-Dichloroethane	75343	2869	Methyl chloroform production by hydrochlorination	Separation unit	30112525	1 lb/ton produced	Control uncertain, based on mass balance and tests	95
1,2-Dichloroethane	107062	2869	Methyl chloroform production from ethane	Distillation vent	30112520	0.138 lb/ton methyl chloroform produced	Uncontrolled, based on hypothetical plant with 4.5 x 10E7 lb/yr production capacity	70
1,2-Dichloroethane	107062	2869	Methyl chloroform production from ethane	Distillation vent	30112520	0.002 lb/ton methyl chloroform produced	Controlled by incinerator, based on hypothetical plant with 4.5 x 10E7 lb/yr production capacity	70
1,2-Dichloroethane	107062	2869	Methyl chloroform production from vinyl chloride	Distillation vent	30112520	0.36 lb/ton methyl chloroform produced	Uncontrolled, based on hypothetical plant with 3 x 10E8 lb/yr production capacity	70
1,2-Dichloroethane	107062	2869	Methyl chloroform production from vinyl chloride	Distillation vent	30112520	0.008 lb/ton methyl chloroform produced	Controlled by incinerator, based on hypothetical plant with 3 x 10E8 lb/yr production capacity	70
1,2-Dichloroethane	107062	2869	Methyl chloroform production from vinyl chloride	Hydrochlorinator vent	301125	<0.34 lb/ton of methyl chloroform prod.	Controlled by incineration, calculated based on engineering judgement	51
1,2-Dichloroethane	107062	2869	Methyl chloroform production from vinyl chloride	Hydrochlorinator vent condenser	301125	17 lb/ton of methyl chloroform prod.	Uncontrolled, basis unspecified	51
1,2-Dichloroethane	107062	2869	Methyl chloroform production from vinyl chloride	Steam stripper vent condenser	301125	1 lb/ton of methyl chloroform prod.	Uncontrolled, basis unspecified	51
1,2-Dichloroethane	107062	2869	Perchloroethylene production	Chlorination of ethylene dichloride proc/neutralize & drying area vent	30112520	6.2 lb/ton of PCE produced	Uncontrolled, based on data from one producer	70
1,2-Dichloroethane	107062	2869	Perchloroethylene production	Chlorination or oxychlorination process	30112520	10 lb/ton PCE produced	Controlled, aggregate estimate based on national emissions and production estimates	51
1,2-Dichloroethane	107062	2869	Perchloroethylene production	Hydrocarbon chlorinolysis process, hex waste handling	30112520	0.052 lb/ton PCE and CCl4 produced	Uncontrolled, based on hypothetical plant producing 1.1 x 10E8 lb/yr PCE & 6.6 x 10E7 lb/yr CCl4	51

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
1,2-Dichloroethane	107062	2869	Perchloroethylene production	Hydrocarbon chlorinolysis process, hex waste handling	30112520	0.00052 lb/ton PCE and CCl4 produced	Contr+vapor bal. sys. & carbon adsor./hypothet. plant prod. 1.1x10E8 lb/yr PCE & 6.6x10E7 lb/yr CCl4	51
1,2-Dichloroethane	107062	2869	Trichloroethylene production	Entire process	30112530	10 lb/ton TCE produced	Controlled, aggregate estimate based on national emissions and production estimates	51
1,2-Dichloroethane	107062	2869	Trichloroethylene production by oxyhydrochlorination process	Absorption	30112530	26 lb/ton produced	Control unclear, based on mass balance and testing	95
1,2-Dichloroethane	107062	2869	Vinyl chloride monomer production	Heavy ends from distillation column	503	1.2-1.6 lb/ton of vinyl chloride produce	Uncontrolled, basis unspecified	51
1,2-Dichloroethane	107062	2869	Vinyl chloride monomer production	Heavy ends from distillation column	50300501	<0.032 lb/ton of vinyl chloride produced	Controlled by thermal incineration, calculated based on engineering judgement	51
1,2-Dichloroethane	107062	2869	Vinylidene chloride production	Entire process	30112551	11.4 lb/ton vinylidene chloride produced	Controlled, aggregate estimate based on national emissions and production estimates	51
1,2-Dichloroethane	107062	2911	Gasoline blending at refineries	Storage and handling of EDC and blended product	304	2 lb/ton of EDC used	Control status and basis unspecified	51
1,2-Dichloroethane	107062	2911	Gasoline blending at refineries	Storage and handling of EDC and blended product	403	0.00148 lb/10E3 gal leaded gasoline prod	Control status and basis unspecified	51
1,2-Dichloroethane	107062	421	Tank truck transport	Tank truck loaded with product - extreme losses	406001	4.91 x 10E-6 lb/1000 gal transported	Calculated from gasoline vapors estimates	50
1,2-Dichloroethane	107062	421	Tank truck transport	Tank truck loaded with product - typical losses	406001	4.91 x 10E-7 lb/1000 gal transported	Calculated from gasoline vapors estimates	50
1,2-Dichloroethane	107062	421	Tank truck transport	Tank truck unloaded - extreme losses	406001	2.14 x 10E-5 lb/1000 gal transported	Calculated from gasoline vapors estimates	50
1,2-Dichloroethane	107062	421	Tank truck transport	Tank truck unloaded - typical losses	406001	6.38 x 10E-6 lb/1000 gal transported	Calculated from gasoline vapors estimates	50
1,1-Dichloroethane	75343	4953	Sewage sludge incineration	Multiple hearth furnace	50100506	4.6 x 10E-4 lb/ton dry sludge	One test, scrubber	101
1,2-Dichloroethane	107062	4953	Sewage sludge incineration	Fluidized-bed furnace	50100506	1 x 10E-5 lb/ton dry sludge	One test, scrubber, both isomers	101
1,2-Dichloroethane	107062	4953	Sewage sludge incineration	Multiple hearth furnace	50100506	0.0018 lb/ton dry sludge	Two tests, scrubber, both isomers	101
1,2-Dichloroethane	107062	4953	Wastewater treatment	POTW	50100701	720 lb/ton ethylene dichlor. in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
1,2-Dichloroethane	107062	517	Gasoline loading of tank car/truck with loaded gasoline	Splash loading balance service	40600144	0.0016 lb/10E3 gal transferred	Uncontrolled, calculated based on engineering judgement	51
1,2-Dichloroethane	107062	517	Gasoline loading of tank car/truck with loaded gasoline	Splash loading normal service	40600136	0.002245 lb/10E3 gal transferred	Uncontrolled, calculated based on engineering judgement	51
1,2-Dichloroethane	107062	5171	Gasoline loading of tank trucks at bulk plants	Splash loading - dedicated normal service	404002	0.001402 lb/10E3 gal throughput	Calculated from gasoline vapor estimates	50
1,2-Dichloroethane	107062	5171	Gasoline loading of tank trucks at bulk plants	Splash loading - vapor balance service	404002	9.6 x 10E-4 lb/10E3 gal throughput	Calculated from gasoline vapor estimates	50
1,2-Dichloroethane	107062	5171	Gasoline loading of tank trucks at bulk plants	Submerged loading - dedicated normal service	404002	5.76 x 10E-4 lb/10E3 gal throughput	Calculated from gasoline vapor estimates	50
1,2-Dichloroethane	107062	5171	Gasoline loading of tank trucks at bulk plants	Submerged loading - vapor balance service	404002	9.6 x 10E-4 lb/10E3 gal throughput	Calculated from gasoline vapor estimates	50
1,2-Dichloroethane	107062	5171	Gasoline loading of tank trucks at bulk terminals	Splash loading - dedicated normal service	404001	0.0014 lb/10E3 gal transferred	Calculated from gasoline vapors estimates	50
1,2-Dichloroethane	107062	5171	Gasoline loading of tank trucks at bulk terminals	Splash loading - vapor balance service	404001	9.6 x 10E-4 lb/10E3 gal transferred	Calculated from gasoline vapors estimates	50
1,2-Dichloroethane	107062	5171	Gasoline loading of tank trucks at bulk terminals	Submerged loading - dedicated normal service	404001	5.78 x 10E-4 lb/10E3 gal transferred	Calculated from gasoline vapors estimates	50
1,2-Dichloroethane	107062	5171	Gasoline loading of tank trucks at bulk terminals	Submerged loading - vapor balance service	404001	9.6 x 10E-4 lb/10E3 gal transferred	Calculated from gasoline vapors estimates	50
1,2-Dichloroethane	107062	5171	Gasoline storage at bulk plants	Storage tanks - breathing loss	404002	3.14 x 10E-8 lb/10E3 gal throughput	Calculated from gasoline vapor estimates	50
1,2-Dichloroethane	107062	5171	Gasoline storage at bulk plants	Storage tanks - draining losses	404002	2.35 x 10E-8 lb/10E3 gal throughput	Calculated from gasoline vapor estimates	50
1,2-Dichloroethane	107062	5171	Gasoline storage at bulk plants	Storage tanks - filling losses	404002	5.98 x 10E-8 lb/10E3 gal throughput	Calculated from gasoline vapor estimates	50
1,2-Dichloroethane	107062	5171	Gasoline storage at bulk terminals	Fixed-roof storage tanks - breathing losses	404001	2.49 x 10E-5 lb/10E3 gal throughput	Calculated from gasoline vapors estimates	50
1,2-Dichloroethane	107062	5171	Gasoline storage at bulk terminals	Fixed-roof storage tanks - working losses	404001	9.48 x 10E-8 lb/10E3 gal throughput	Calculated from gasoline vapors estimates	50
1,2-Dichloroethane	107062	5171	Gasoline storage at bulk terminals	Floating-roof storage tanks - storage losses	404001	2.71 x 10E-5 lb/10E3 gal throughput	Calculated from gasoline vapors estimates	50
1,2-Dichloroethane	107062	5171	Gasoline storage at bulk terminals	Floating-roof storage tanks - working losses	404001	1.97 x 10E-11 lb/10E3 gal throughput	Calculated from gasoline vapors estimates	50

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
1,2-Dichloroethane	107062	5541	Gasoline marketing activities	Refueling operations - displacement losses (controlled)	406004	0.000146 lb/1000 gal throughput	Calculated from gasoline vapor estimates	97
1,2-Dichloroethane	107062	5541	Gasoline marketing activities	Refueling operations - displacement losses (uncontrolled)	406004	0.00146 lb/1000 gal throughput	Calculated from gasoline vapor estimates	97
1,2-Dichloroethane	107062	5541	Gasoline marketing activities	Refueling operations - spillage	406004	8.85 x 10E-5 lb/1000 gal throughput	Calculated from gasoline vapor estimates	97
1,2-Dichloroethane	107062	5541	Gasoline marketing activities	Vehicle refueling operations, displacement losses	40600403	0.00175 lb/10E3 gal leaded gas transfer	Uncontrolled, calculated based on engineering judgement	51
1,2-Dichloroethane	107062	5541	Gasoline marketing activities	Vehicle refueling operations, displacement losses	40600403	0.000175 lb/10E3 gal leaded gas transfer	Controlled, calculated based on engineering judgement	51
1,2-Dichloroethane	107062	5541	Gasoline marketing activities	Vehicle refueling operations, spillage	40600402	0.000133 lb/10E3 gal leaded gas transfer	Uncontrolled, calculated based on engineering judgement	51
1,2-Dichloroethane	107062	5541	Gasoline storage at service stations	Balanced submerged filling of underground tanks	40600306	4.42 x 10E-5 lb/1000 gal throughput	Calculated from gasoline vapor estimates	97
1,2-Dichloroethane	107062	5541	Gasoline storage at service stations	Filling underground tank (splash filling), leaded gasoline	40600301	0.00217 lb/10E3 gal transferred	Uncontrolled, calculated based on engineering judgement	51
1,2-Dichloroethane	107062	5541	Gasoline storage at service stations	Splash filling of underground tanks	40600301	0.00153 lb/1000 gal throughput	Calculated from gasoline vapor estimates	97
1,2-Dichloroethane	107062	5541	Gasoline storage at service stations	Submerged filling of underground tanks	40600302	0.000976 lb/1000 gal throughput	Calculated from gasoline vapor estimates	97
1,2-Dichloroethane	107062	5541	Gasoline storage at service stations	Tank breathing and emptying	406003	1.327 x 10E-4 lb/1000 gal throughput	Calculated from gasoline vapor estimates	97
1,2-Dichloroethylene, (e)-	156605	2869	Perchloroethylene and trichloroethylene production	Oxychlorination process, distillation vent	301125	0.45 lb/ton of PCE and TCE produced	Uncontrolled, based on data from one producer	1
1,2-Dichloroethylene, (e)-	156605	2869	Perchloroethylene and trichloroethylene production	Oxychlorination process, drying column vent	301125	1.3 lb/ton of PCE and TCE produced	Uncontrolled, based on data from one producer	1
1,2-Dichloroethylene, (e)-	156605	2869	Perchloroethylene production	Chlorination of ethylene dichloride proc/distillation vent	30112521	0.15 lb/ton of PCE produced	Uncontrolled, based on data from one producer	1

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
1,2-Dichloroethylene, (e)-	156605	2869	Perchloroethylene production	Chlorination of ethylene dichloride proc/neutralize & drying area vent	30112520	2.3 lb/ton of PCE produced	Uncontrolled, based on data from one producer	1
1,2-Dichloroethylene, (z)-	156592	2869	Perchloroethylene and trichloroethylene production	Oxychlorination process, distillation vent	301125	0.126 lb/ton of PCE and TCE produced	Uncontrolled, based on data from one producer	1
1,2-Dichloroethylene, (z)-	156592	2869	Perchloroethylene production	Chlorination of ethylene dichloride proc/distillation vent	30112521	0.086 lb/ton of PCE produced	Uncontrolled, based on data from one producer	1
1,2-Dichloroethylene, (z)-	156592	2869	Perchloroethylene production	Chlorination of ethylene dichloride proc/neutralize & drying area vent	30112520	0.58 lb/ton of PCE produced	Uncontrolled, based on data from one producer	1
2,4-Dichloro-6-nitroaniline	2683434	226	Woven fabric finishing	Curing oven - resin finish	330001	0.0098 lb/ton fabric	Uncontrolled, average of two tests	52
2,4-Dichloro-6-nitroaniline	2683434	226	Woven fabric finishing	Tenter frames - resin finish	330001	0.0066 lb/ton fabric	Uncontrolled, one test	52
2,4-Dichloro-6-nitroaniline	2683434	226	Woven fabric finishing	Thermosol dyeing	330001	0.0012 lb/ton fabric	Uncontrolled, one test	52
2,4-Dichlorophenol	120832	4953	Sewage sludge incineration	Fluidized-bed furnace	50100506	<7.6 x 10E-5 lb/ton dry sludge	One test, scrubber	101
2,4-Dichlorophenol	120832	4953	Sewage sludge incineration	Multiple hearth furnace	50100506	<4.6 x 10E-5 lb/ton dry sludge	One test, scrubber	101
2,4-Dichlorophenol	120832	4953	Wastewater treatment	POTW	50100701	18 lb/ton 2,4-dichlorophe. in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	40
Dichloropropane	26638197	2869	Propylene oxide production by chlorohydrination	Absorption	30120502	≥6.84 lb/ton produced	Control unclear, based on mass balance and testing	95
Diethyl phthalate	84662	226	Woven fabric finishing	Heat setting	330001	5 x 10E-4 lb/ton fabric	Uncontrolled, based on test data	52
Diethyl phthalate	84662	226	Woven fabric finishing	Tenter frames - resin finish	330001	6.8 x 10E-4 lb/ton fabric	Uncontrolled, test data	52
Diethyl phthalate	84662	226	Woven fabric finishing	Thermosol dyeing	330001	9 x 10E-6 lb/ton fabric	Uncontrolled, average of two tests	52
Dihydroindene	496117		Scrap tire, open burning	Tires in experimental burn hut		0.146 lb/ton tire	VOST samples burn rate = 0.9 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Dihydroindene	496117		Scrap tire, open burning	Tires in experimental burn hut		0.068 lb/ton tire	VOST samples burn rate = 1.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Dihydroindene	496117		Scrap tire, open burning	Tires in experimental burn hut		0.070 lb/ton tire	VOST samples burn rate = 1.4 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Dihydroindene	496117		Scrap tire, open burning	Tires in experimental burn hut		0.2302 lb/ton tire	VOST samples burn rate = 0.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Dihydroindene	496117		Scrap tire, open burning	Tires in experimental burn hut		0.404 lb/ton tire	VOST samples burn rate = 0.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Dihydroindene	496117		Scrap tire, open burning	Tires in experimental burn hut		0.394 lb/ton tire	VOST samples burn rate = 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Dihydroindene	496117		Scrap tire, open burning	Tires in experimental burn hut		0.033 lb/ton tire	VOST samples burn rate = 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Diethyl phthalate	131113	226	Woven fabric finishing	Curing oven - resin finish	330001	0.042 lb/ton fabric	Uncontrolled, average of three tests	92
Diethyl phthalate	131113	226	Woven fabric finishing	Tenter frames - resin finish	330001	0.26 lb/ton fabric	Uncontrolled, test data	92
Diethyl phthalate	131113	226	Woven fabric finishing	Thermosol dyeing	330001	0.0038 lb/ton fabric	Uncontrolled, average of two tests	92
Diethylformamide, N,N-	68122	4953	Wastewater treatment	POTW	50100701	80 lb/ton DMF in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
Dimethylmethanamine, N,N-	75503		Fish processing plants	Fish scrap cookers - fresh	30201201	0.3 lb/ton fish	Uncontrolled	97
Dimethylmethanamine, N,N-	75503		Fish processing plants	Fish scrap cookers - stale	30201202	3.5 lb/ton fish	Uncontrolled	97
2,4-Dimethylphenol	105679	4953	Sewage sludge incineration	Fluidized-bed furnace	50100506	<5.6 x 10E-5 lb/ton dry sludge	One test, scrubber	101
2,4-Dimethylphenol	105679	4953	Sewage sludge incineration	Multiple hearth furnace	50100506	<3.4 x 10E-5 lb/ton dry sludge	One test, scrubber	101
Dimethylstyrene	27576030	2865	Acetone/phenol manufacture from cumene	Cumene peroxidation vent	30120202	0.0001 lb/ton phenol	Controlled (not specified), based on sampling, 1977 data, average factors	125
4,6-Dinitro-o-cresol	534521	4953	Sewage sludge incineration	Fluidized-bed furnace	50100506	<9.4 x 10E-5 lb/ton sludge	One test, scrubber	101
4,6-Dinitro-o-cresol	534521	4953	Sewage sludge incineration	Multiple hearth furnace	50100506	<3.82 x 10E-4 lb/ton dry sludge	One test, scrubber	101
2,4-Dinitrophenol	51285	4953	Sewage sludge incineration	Fluidized-bed furnace	50100506	<0.001372 lb/ton dry sludge	One test, scrubber	101

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Dioctyl phthalate	117817	4953	Sewage sludge incineration	Fluidized-bed furnace	50100504	9.32 x 10E-4 lb/ton dry sludge	One test, scrubber	101
Dioctyl phthalate	117817	4953	Sewage sludge incineration	Multiple hearth furnace	50100506	0.0028 lb/ton dry sludge	Average of two tests, scrubber	101
Diphenyl ether	101848	2865	Phthalic anhydride production - naphthalene process	Fugitive emissions	301019	0.032 lb/ton PA produced	Uncontrolled, test data and engineering judgement	120
Diphenyl ether	101848	2865	Phthalic anhydride production - xylene process	Fugitive emissions	301019	0.032 lb/ton PA produced	Uncontrolled, heat transfer fluid	120
Dipropyl phthalate	131168	226	Woven fabric finishing	Heat setting	330001	6.6 x 10E-4 lb/ton fabric	Uncontrolled, based on test data	52
Dipropyl phthalate	131168	226	Woven fabric finishing	Tenter frames - resin finish	330001	4.2 x 10E-5 lb/ton fabric	Uncontrolled, test data	52
Dipropyl phthalate	131168	226	Woven fabric finishing	Thermosol dyeing	330001	1.66 x 10E-4 lb/ton fabric	Uncontrolled, average of two tests	52
Divinyl benzene, (mixed isomers)	1321740	226	Woven fabric finishing	Curing oven - resin finish	330001	0.00128 lb/ton fabric	Uncontrolled, one test	52
Divinyl benzene, (mixed isomers)	1321740	226	Woven fabric finishing	Tenter frames - resin finish	330001	8.6 x 10E-4 lb/ton fabric	Uncontrolled, average of two tests	52
Epichlorohydrin	106898	28	Epichlorohydrin use as a feedstock in batch processes	Fugitive emissions	301	14.2 lb/ton of epichlorohydrin used	Based on aggregate emis. & thruput est., represents no partic. fac., based on SOCMI VOC emis. fac.	109
Epichlorohydrin	106898	28	Epichlorohydrin use as a feedstock in batch processes	Process vents	301	1.12 lb/ton epichlorohydrin used	Based on aggregate emissions and throughput estimates, represents no particular facility	109
Epichlorohydrin	106898	28	Epichlorohydrin use as a feedstock in batch processes	Storage facilities (includes storage tanks and transfer operations)	301	0.94 lb/ton of epichlorohydrin used	Based on aggregate emissions and throughput estimates, represents no particular facility	109
Epichlorohydrin	106898	2821	Epoxy resins (continuous process) production	Storage tank emissions	407	0.6 lb/ton of product	Control status unspecified, based on one plant's estimates	109
Epichlorohydrin	106898	2821	Epoxy resins (continuous process) production	Storage tank emissions	407	0 lb/ton of product	Tanks vented to balloon header, based on one plant's estimates	109
Epichlorohydrin	106898	2821	Epoxy resins (continuous process) production	Vapor recovery system	30101847	0.01 lb/ton of product	98% efficient control device, based on one facility only	109
Epichlorohydrin	106898	2869	Epichlorohydrin production	Fugitive emissions	30130580	1.24 lb/ton epichlorohydrin produced	Uncontrolled, based on SOCMI VOC emission factors	109

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Epichlorohydrin	106898	2869	Epichlorohydrin production	Process vents	301305	0.00094 lb/ton epichlorohydrin produced	Controlled, based on ratio of nationwide emis. totals & nationwide annual production rate	109
Epichlorohydrin	106898	2869	Epichlorohydrin production	Storage facilities (includes storage tanks and transfer operations)	301305	0.30 lb/ton epichlorohydrin produced	Control status unspecified, based on ratio of nationwide emis. totals & nationwide annual prod. rate	109
Epichlorohydrin	106898	2869	Epichlorohydrin production by hydrochlorination	Separation unit	301305	3 lb/ton produced	Control unclear, based on mass balance and testing	95
Epichlorohydrin	106898	2869	Propylene oxide production by chlorohydrination	Absorption	30120502	3.08 lb/ton produced	Control unclear, based on mass balance and testing	95
Ethane	74840	806	Hospital waste incineration	Incinerator	315020	<0.003 lb/ton feed	Uncontrolled, test data	167
2-(2-(2-Ethoxyethoxy)ethoxy) ethanol	112505	2869	Glycol ether production - met nol process	Vacuum system vent	30125302	0.03 lb/ton glycol ether produced	Uncontrolled, approximation based on data from one plant	142
Ethyl acrylate	140885	2869	Acrylic acid production - propylene oxidation	Quench absorber off-gas	30113222	2.4 lb/ton acrylic acid produced	Based on data from one plant	151
Ethyl alcohol	64175	205	Bakeries	Bread baking, processing sponge dough	30203201	10-16 lb/ton bread	Uncontrolled	97
Ethyl alcohol	64175	205	Bakeries	Bread baking, straight dough process	30203202	1.0 lb/ton bread	Uncontrolled	97
Ethyl alcohol	64175	2084	Wine making	Fermentation	30201105	1.06 lb/1000 gal fermented	Uncontrolled, for a 52 degree Fahrenheit tank	97
Ethyl alcohol	64175	2084	Wine making	Fermentation	30201106	4.79 lb/1000 gal fermented	Uncontrolled, for a 80 degree Fahrenheit tank	97
2-Ethyl hexanal	123057	226	Woven fabric finishing	Thermosol dyeing	330001	0.0042 lb/ton fabric	Uncontrolled, one test	52
Ethyl styrene	28106301	226	Woven fabric finishing	Curing oven - resin finish	330001	0.0092 lb/ton fabric	Uncontrolled, average of two tests	52
Ethyl styrene	28106301	226	Woven fabric finishing	Tenter frames - resin finish	330001	0.0078 lb/ton fabric	Uncontrolled, average of two tests	52
Ethyl styrene	28106301	226	Woven fabric finishing	Thermosol dyeing	330001	0.00108 lb/ton fabric	Uncontrolled, one test	52
Ethylbenzene	100414		Scrap tire, open burning	Tires in experimental burn hut		0.636 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.3 kg/hr, uncontrolled	212
Ethylbenzene	100414		Scrap tire, open burning	Tires in experimental burn hut		0.710 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr, uncontrolled	212

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POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Ethylbenzene	100414		Scrap tire, open burning	Tires in experimental burn hut		0.694 lb/ton tire	IAD-2 extracts w/MS analysis, chunk condition = 1/4-1/6 of tire, burn rate = 1.7 kg/hr, uncontrolled	212
Ethylbenzene	100414		Scrap tire, open burning	Tires in experimental burn hut		0.131 lb/ton tire	IAD-2 extracts w/MS analysis, chunk condition = 1/4-1/6 of tire, burn rate = 2.3 kg/hr, uncontrolled	212
Ethylbenzene	100414		Scrap tire, open burning	Tires in experimental burn hut		0.567 lb/ton tire	VOST samples burn rate = 1.5 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Ethylbenzene	100414		Scrap tire, open burning	Tires in experimental burn hut		0.263 lb/ton tire	VOST samples burn rate = 2.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Ethylbenzene	100414		Scrap tire, open burning	Tires in experimental burn hut		0.814 lb/ton tire	VOST samples burn rate = 0.9 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Ethylbenzene	100414		Scrap tire, open burning	Tires in experimental burn hut		0.408 lb/ton tire	VOST samples burn rate = 1.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Ethylbenzene	100414		Scrap tire, open burning	Tires in experimental burn hut		0.191 lb/ton tire	VOST samples burn rate = 1.4 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Ethylbenzene	100414		Scrap tire, open burning	Tires in experimental burn hut		1.341 lb/ton tire	VOST samples burn rate = 0.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Ethylbenzene	100414		Scrap tire, open burning	Tires in experimental burn hut		4.379 lb/ton tire	VOST samples burn rate = 0.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Ethylbenzene	100414		Scrap tire, open burning	Tires in experimental burn hut		0.574 lb/ton tire	VOST samples burn rate = 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Ethylbenzene	100414		Scrap tire, open burning	Tires in experimental burn hut		0.102 lb/ton tire	VOST samples burn rate = 3.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Ethylbenzene	100414		Scrap tire, open burning	Tires in experimental burn hut		0.212 lb/ton tire	VOST samples burn rate = 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Ethylbenzene	100414		Scrap tire, open burning	Tires in experimental burn hut		0.093 lb/ton tire	VOST samples burn rate = 2.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Ethylbenzene	100414		Scrap tire, open burning	Tires in experimental burn hut		0.060 lb/ton tire	VOST samples burn rate = 4.43 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Ethylbenzene	100414	191	Agricultural industry-field burning of plastic crop covers	Used black plastic		0.077 ug/m3	Experimental simulation, plastic sheet = 1 lb., GC/FID test from VOST samples, range is 0.028 - 0.126 ug/m3	210
Ethylbenzene	100414	191	Agricultural industry-field burning of plastic crop covers	Unused black plastic		0.040 ug/m3	Experimental simulation, plastic sheet = 1 lb., GC/FID test from VOST samples, range is 0.013 - 0.066 ug/m3	210
Ethylbenzene	100414	2491	Wood preserving	Incineration of waste	307005	Not detectable	Controlled with baghouse	6

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Ethylbenzene	100414	2491	Wood preserving	Thermal (pan) evaporation of pentachlorophenol wastewater		<5 mg/m3 gas vented	Average value	6
Ethylbenzene	100414	2865	Acetone/phenol manufacture from cumene	Cleavage section vents (combined)	30120211	1.0 x 10E-6 lb/ton phenol	Controlled (unspecified), based on test data, 1977 data, average factors	125
Ethylbenzene	100414	2865	Acetone/phenol manufacture from cumene	Cumene peroxidation vent	30120202	0.00084 lb/ton phenol	Controlled (not specified), based on scaling, 1977 data, average factors	125
Ethylbenzene	100414	2911	Petroleum refinery	Fluidized catalytic cracking unit, fugitives	306	0.577 lb/hr	Based on weighted emission stream content	92
Ethylbenzene	100414	4953	Sewage sludge incineration	Fluidized-bed furnace	50100506	4 x 10E-5 lb/ton dry sludge	One test, scrubber	101
Ethylbenzene	100414	4953	Sewage sludge incineration	Multiple hearth furnace	50100506	0.0027 lb/ton dry sludge	Five tests, scrubber	101
Ethylbenzene	100414	4953	Wastewater treatment	POTW	50100701	1120 lb/ton ethyl benzene in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
Ethylbenzene	100414	5541	Gasoline marketing activities	Vehicle refueling, vapor loss	40600301	0.0198 lb/gal of gas pumped	Listed as emission rate for ethylbenzene/2,3-diethylheptane	4
Ethylene	74851	286	Ethylene production	Fugitive emission - flanges	30119749	0.0048 lb/hr	Uncontrolled emission factor	214
Ethylene	74851	286	Ethylene production	Fugitive emission - sampling connections	30119749	0.033 lb/hr	Uncontrolled emission factor	214
Ethylene	74851	286	Ethylene production	Fugitive emission - compressors	30119749	0.394 lb/hr	Uncontrolled emission factor	214
Ethylene	74851	286	Ethylene production	Fugitive emission - open-ended lines	30119749	0.0061 lb/hr	Uncontrolled emission factor	214
Ethylene	74851	286	Ethylene production	Fugitive emission - gas pressure relief valve	30119749	0.2407 lb/hr	Uncontrolled emission factor	214
Ethylene	74851	286	Ethylene production	Fugitive emission - valves	30119749	0.00050 lb/hr	Uncontrolled emission factor for a heavy liquid	214
Ethylene	74851	286	Ethylene production	Fugitive emission - valves	30119749	0.0396 lb/hr	Uncontrolled emission factor for a light liquid	214
Ethylene	74851	286	Ethylene production	Fugitive emission - valves	30119749	0.0189 lb/hr	Uncontrolled emission factor for a gas	214
Ethylene	74851	286	Ethylene production	Fugitive emission - pump seals	30119749	0.0297 lb/hr	Uncontrolled emission factor for a heavy liquid	214

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POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Ethylene	74851	284	Ethylene production	Fugitive emission - pump seals	30119749	0.1278 lb/hr	Uncontrolled emission factor for a light liquid	214
Ethylene	74851	2869	Acetic anhydride production	Reaction by-product gas	30113302	3.0 lb/ton acetic anhydride produced	Based on data from three plants	192
Ethylene	74851	2869	Ethylene dichloride production - direct chlorination	Absorption	30112502	6.2 lb/ton produced	Control uncertain, based on tests and mass balance	99
Ethylene	74851	2895	Carbon black manufacture - oil furnace	Main process purge vent	30100504	3.2 lb/ton carbon black produced	Based on test data	97
Ethylene	74851	806	Hospital waste incineration	Incinerator	315020	<0.02 lb/ton feed	Uncontrolled, test data	147
Ethylene glycol	107211	4741	Rail tank car cleaning	Entire process	490003	0.0007 lb/tank car	Emission measurement	97
Ethylene oxide	75218	20	Foodstuff fumigation	Fugitive emissions		600 lb/ton ethylene oxide used	Uncontrolled, based on source tests	44
Ethylene oxide	75218	20	Foodstuff fumigation	Process vents		400 lb/ton ethylene oxide used	Uncontrolled, based on source tests	44
Ethylene oxide	75218	20	Foodstuff fumigation	Wastewater emissions		1000 lb/ton ethylene oxide used	Uncontrolled, based on source tests	44
Ethylene oxide	75218	20	Foodstuff fumigation, with recycling water-sealed pump	Fugitive emissions		600 lb/ton ethylene oxide used	Uncontrolled, based on source tests	44
Ethylene oxide	75218	20	Foodstuff fumigation, with recycling water-sealed pump	Process - general		1400 lb/ton ethylene oxide used	Uncontrolled, based on source tests	44
Ethylene oxide	75218	2869	Ethylene oxide production by air-oxidation process	Purge absorber vent	30117402	0.01-2 lb/ton	Uncontrolled, based on source tests	63
Ethylene oxide	75218	2869	Ethylene oxide production by air-oxidation process	Purge absorber vent	30117402	0 lb/ton	Controlled by catalytic oxidation or emergency flare, based on source tests	63
Ethylene oxide	75218	2869	Ethylene oxide production by air-oxidation process	Purge absorber vent	30117402	0.08 lb/ton	Controlled 80 percent by thermal oxidation, based on source tests	63
Ethylene oxide	75218	2869	Ethylene oxide production by air-oxidation process	Storage and handling emissions	301174	5.7 lb/ton	Uncontrolled, based on source tests	63
Ethylene oxide	75218	2869	Ethylene oxide production by air-oxidation process	Storage and handling emissions	301174	0 lb/ton	Controlled by recycle or scrubber with incineration or flaring, based on source tests	63
Ethylene oxide	75218	2869	Ethylene oxide production by air-oxidation process	Stripper vent	30117421	<1.4 lb/ton	Uncontrolled, based on source tests	63

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Ethylene oxide	75218	2869	Ethylene oxide production by air-oxidation process	Stripper vent	30117421	0 lb/ton	Controlled by boiler, based on source tests	63
Ethylene oxide	75218	2869	Ethylene oxide production by oxygen-oxidation process	Carbon dioxide desorber vent	30117410	0.00012-1.8 lb/ton	Uncontrolled, based on engineering judgement for hypothetical plants	63
Ethylene oxide	75218	2869	Ethylene oxide production by oxygen-oxidation process	Carbon dioxide desorber vent	30117410	0.12 lb/ton	Controlled by carbonate flasher/vent condenser, based on engineering judgement for hypoth. plants	63
Ethylene oxide	75218	2869	Ethylene oxide production by oxygen-oxidation process	Carbon dioxide desorber vent	30117410	0 lb/ton	Controlled by CO2 recovery or methanol unit, based on engineering judgement for hypoth. plants	63
Ethylene oxide	75218	2869	Ethylene oxide production by oxygen-oxidation process	Cooling towers	301174	0.14 lb/ton	Uncontrolled, based on engineering judgement for hypothetical plants	63
Ethylene oxide	75218	2869	Ethylene oxide production by oxygen-oxidation process	Cooling towers	301174	0.028 lb/ton	Increased stripper column effectiveness, based on engineering judgement for hypothetical plants	63
Ethylene oxide	75218	2869	Ethylene oxide production by oxygen-oxidation process	Main process purge vent	30117411	0.002-0.004 lb/ton	Uncontrolled, based on engineering judgement for hypothetical plants	63
Ethylene oxide	75218	2869	Ethylene oxide production by oxygen-oxidation process	Main process purge vent	30117411	0 lb/ton	Controlled by boiler or incinerator, based on engineering judgement for hypothetical plants	63
Ethylene oxide	75218	2869	Ethylene oxide production by oxygen-oxidation process	Storage and handling emissions	301174	5.2 lb/ton	Uncontrolled, based on engineering judgement for hypothetical plants	63
Ethylene oxide	75218	2869	Ethylene oxide production by oxygen-oxidation process	Storage and handling emissions	301174	0 lb/ton	Controlled by aqueous scrubber, based on engineering judgement for hypothetical plants	63
Ethylene oxide	75218	2869	Ethylene oxide production by oxygen-oxidation process	Stripper vent	30117421	<0.2 lb/ton	Uncontrolled, based on engineering judgement for hypothetical plants	63
Ethylene oxide	75218	2869	Ethylene oxide production by oxygen-oxidation process	Stripper vent	30117421	<0.004 lb/ton	Controlled by various reabsorbers/incin./water scrubbers/vent absorbers, based on eng. judgement	63
Ethylene oxide	75218	8062	Hospital sterilization	Fugitive emissions	315020	400 lb/ton ethylene oxide used	Uncontrolled, based on source tests	64
Ethylene oxide	75218	8062	Hospital sterilization	Fugitive emissions	315020	520 lb/ton/hospital bed	Uncontrolled, based on source tests, inappropriate to use this factor for individual hospitals	64

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Ethylene oxide	75218	8062	Hospital sterilization	Fugitive emissions	315020	300 lb/ton ethylene oxide purchased	Uncontrolled, based on source tests	44
Ethylene oxide	75218	8062	Hospital sterilization	Process vents	315020	500 lb/ton ethylene oxide used	Uncontrolled, based on source tests	44
Ethylene oxide	75218	8062	Hospital sterilization	Process vents	315020	440 lb/ton/hospital bed	Uncontrolled, based on source tests, inappropriate to use this factor for individual hospitals	44
Ethylene oxide	75218	8062	Hospital sterilization	Process vents	315020	380 lb/ton ethylene oxide purchased	Uncontrolled, based on source tests	44
Ethylene oxide	75218	8062	Hospital sterilization	Wastewater emissions	315020	1100 lb/ton ethylene oxide used	Uncontrolled, based on source tests	44
Ethylene oxide	75218	8062	Hospital sterilization	Wastewater emissions	315020	1440 lb/ton/hospital bed	Uncontrolled, based on source tests, inappropriate to use this factor for individual hospitals	44
Ethylene oxide	75218	8062	Hospital sterilization	Wastewater emissions	315020	840 lb/ton ethylene oxide purchased	Uncontrolled, based on source tests	44
Ethylene oxide	75218	8062	Hospital sterilizer, table-top	Fugitive emissions	315020	400 lb/ton ethylene oxide used	Uncontrolled, based on engineering judgement	44
Ethylene oxide	75218	8062	Hospital sterilizer, table-top	Fugitive emissions	315020	300 lb/ton ethylene oxide purchased	Uncontrolled, based on engineering judgement	44
Ethylene oxide	75218	8062	Hospital sterilizer, table-top	Process - general	315020	1400 lb/ton ethylene oxide used	Uncontrolled, based on engineering judgement	44
Ethylene oxide	75218	8062	Hospital sterilizer, table-top	Process - general	315020	1240 lb/ton ethylene oxide purchased	Uncontrolled, based on engineering judgement	44
Fluoranthene	206440		Scrap tire, open burning	Tires in experimental burn hut		1.045 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter compnt. shred condition = 2" by 2" piece, burn rate=1.3 kg/hr, controlled	212
Fluoranthene	206440		Scrap tire, open burning	Tires in experimental burn hut		0.786 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter compnt. shred condition = 2" by 2" piece, burn rate=..1 kg/hr, controlled	212
Fluoranthene	206440		Scrap tire, open burning	Tires in experimental burn hut		0.791 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter compnt. shred condition = 2" by 2" piece, burn rate=1.7 kg/hr, controlled	212
Fluoranthene	206440		Scrap tire, open burning	Tires in experimental burn hut		0.563 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter compnt. shred condition = 2" by 2" piece, burn rate=2.3 kg/hr, controlled	212
Fluoranthene	206440	25	Wood combustion, industrial	Horizontal return tube	10200904	1.8 x 10E-6 lb/ton fuel (dry basis)	Results of GC/MS analysis of xad-2 resin extract	176

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Fluoranthene	206440	25	Wood combustion, industrial	Balanced draft wiches stoker-fired industrial boiler	10200906	6.6 x 10E-6 lb/ton fuel	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.54 kg/s, boil. eff. 61.3%	177
Fluoranthene	206440	25	Wood combustion, industrial	Balanced draft wiches stoker-fired industrial boiler	10200906	2.8 x 10E-5 lb/ton fuel	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 kg/s, boil. eff. 55.2%	177
Fluorene	86737		Scrap tire, open burning	Tires in experimental burn hut		0.722 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.3 kg/hr, uncontrolled	212
Fluorene	86737		Scrap tire, open burning	Tires in experimental burn hut		0.521 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr, uncontrolled	212
Fluorene	86737		Scrap tire, open burning	Tires in experimental burn hut		0.692 lb/ton tire	XAD-2 extracts w/MS analysis, chunk condition = 1/4-1/6 of tire, burn rate = 1.7 kg/hr, uncontrolled	212
Fluorene	86737		Scrap tire, open burning	Tires in experimental burn hut		0.153 lb/ton tire	XAD-2 extracts w/MS analysis, chunk condition = 1/4-1/6 of tire, burn rate = 2.3 kg/hr, uncontrolled	212
Fluorene	86737		Scrap tire, open burning	Tires in experimental burn hut		0.438 lb/ton tire	Sum of PAH analy on lig extrat. of XAD-2 test & filter composit, shred condition = 2" by 2" piece, burn rate=1.3 kg/hr, controlled	212
Fluorene	86737		Scrap tire, open burning	Tires in experimental burn hut		0.309 lb/ton tire	Sum of PAH analy on lig extrat. of XAD-2 test & filter composit, shred condition = 2" by 2" piece, burn rate=1.1 kg/hr, controlled	212
Fluorene	86737		Scrap tire, open burning	Tires in experimental burn hut		0.494 lb/ton tire	Sum of PAH analy on lig extrat. of XAD-2 test & filter composit, shred condition = 2" by 2" piece, burn rate=1.7 kg/hr, controlled	212
Fluorene	86737		Scrap tire, open burning	Tires in experimental burn hut		0.347 lb/ton tire	Sum of PAH analy on lig extrat. of XAD-2 test & filter composit, shred condition = 2" by 2" piece, burn rate=2.3 kg/hr, controlled	212
Fluoride	16984488		Animal feed defluorination	Thermal defluorination process		190 lbs/ton P2O5	Uncontrolled emissions based on a material balance	186
Fluoride	16984488		Animal feed defluorination	Thermal defluorination process		0.07-0.49 lbs/ton P2O5	Controlled but device not specified	186
Fluoride	16984488		Animal feed defluorination	Feed mixing and drying		0.013 lbs/ton P2O5	Controlled by a wet scrubber	186
Fluoride	16984488	1475	Phosphate rock processing	Fluid bed, oil-fired calciner	30501905	0.0006-0.0030 lbs/ton of rock throughput	Controlled by a venturi scrubber, average of 6 test runs was 0.0016 lbs/ton throughput	192
Fluoride	16984488	2874	Ammonium phosphate production	Dryer/cooler	30103001	0.03 lb/ton phosphate produced	Controlled (not specified)	97

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Fluoride	16984488	2874	Ammonium phosphate production	Product sizing and material transfer	30103003	0.01 lb/ton phosphate produced	Controlled (not specified)	97
Fluoride	16984488	2874	Ammonium phosphate production	Reactor/ammoniator-granulator	30103002	0.05 lb/ton phosphate produced	Controlled (not specified)	97
Fluoride	16984488	2874	Phosphate fertilizer manufacturing	Reactor-granulator/dryer/cooler vents, diammonium phosphate plant	301016	0.0243-0.055 lbs/ton of P2O5 produced	Ctrl by a venturi scrubber & spray-crossflow packed scrubbers, ave 13 tests 0.0345 lbs/ton P2O5	195
Fluoride	16984488	2874	Phosphate fertilizer manufacturing	Barometric condenser hotwell/product acid cooling tank, superphosphori	30101403	0.00041-0.0019 lbs/ton of P2O5 produced	Controlled by a venturi scrubber, average of 6 tests was 0.0007 lbs/ton P2O5	195
Fluoride	16984488	2874	Phosphate fertilizer manufacturing	Diammonium phosphate process	301030	0.14 lb/ton P2O5 input	Controlled with a packed scrubber	174
Fluoride	16984488	2874	Phosphate fertilizer manufacturing	Granular triple superphosphate storage	301029	0.0003-0.0005 lb/ton P2O5 input		174
Fluoride	16984488	2874	Phosphate fertilizer manufacturing - wet process	Gypsum pond fugitive emissions	30101402	0.8-3.2 lbs/acre-day	Assumes F concentration of 12000 PPM in pond, wind speed varies from 1-6 M/Sec, 90 F temp	190
Fluoride	16984488	2874	Phosphate fertilizer manufacturing - wet process	Gypsum pond fugitive emissions	30101402	0.2-7.3 lbs/acre-day	Assumes F concentration of 10-46 PPB above pond	190
Fluoride	16984488	2874	Phosphate fertilizer manufacturing - wet process	Two single-tank reactors, phosphoric acid plant	30101401	0.0040-0.0112 lbs/ton of P2O5 produced	Controlled by two impingement scrubbers in series, average of 3 tests was 0.0081 lbs/ton P2O5	195
Fluoride	16984488	2874	Phosphate fertilizer manufacturing - wet process	Conventional multi-compartment tank reactor, phosphoric acid plant	30101401	0.007-0.0184 lbs/ton of P2O5 produced	Controlled by spray-concurrent packed scrubber, average of 5 test runs was 0.0137 lbs/ton P2O5	195
Fluoride	16984488	2874	Phosphate fertilizer manufacturing - wet process	Conventional multi-compartment tank reactor, phosphoric acid plant	30101401	0.0016-0.0184 lbs/ton of P2O5 produced	Ctrl by spray-crossflow packed scrubber, rng rep 15 test runs / 3 fac., ave rate 0.0088 lb/ton P2O5	195
Fluoride	16984488	2874	Phosphoric acid production	Wet process	301016	0.01-0.02 lb/ton P2O5 input	Controlled with a packed scrubber	174
Fluoride	16984488	2874	Superphosphate (granular triple) production	Curing building	30102907	0.04 lb/ton P2O5	Wet scrubber (97%), based on test data	97
Fluoride	16984488	2874	Superphosphate (granular triple) production	Reactor, granulator, dryer, cooler and screens	30102906	0.24 lb/ton P2O5	Wet scrubber (97%), based on test data	97

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POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Fluoride	16984488	2874	Superphosphate (granular triple) production	Dimplot process	301039	0.187 lbs/ton of P2O5 produced	Controls not specified	190
Fluoride	16984488	2874	Superphosphate (granular triple) production	Open bay storage building	30102908	0.00009-0.00042 lbs/ton of P2O5 produced	Controlled by spray-crossflow packed scrubber, average of 7 tests was 0.0002 lbs/ton P2O5	195
Fluoride	16984488	2874	Superphosphate (granular triple) production	Reactor, granulator, dryer, cooler and screens	30102906	0.174-0.278 lbs/ton of P2O5 produced	Ctrl by 2 venturi, 1 cyclonic, & 1 spray-crossflow packed scrubber, ave of 3 tests 0.211 lb/ton P2O5	195
Fluoride	16984488	2874	Superphosphate (granular triple) production	Reactor, granulator, dryer, cooler and screens	30102906	0.044-0.26 lbs/ton of P2O5 produced	Ctrl by venturi scrubbers & spray-crossflow packed scrubbers, ave of 10 tests 0.121 lb/ton P2O5	195
Fluoride	16984488	2874	Superphosphate (normal) production	Curing building	30102804	3.8 lb/ton P2O5	Uncontrolled	97
Fluoride	16984488	2874	Superphosphate (normal) production	Mixer and den	30102805	0.2 lb/ton P2O5	Wet scrubber (97%)	97
Fluoride	16984488	2874	Superphosphate (run-of-the-pile triple) production	Cone mixer, den and curing building	30102905	0.2 lb/ton P2O5	Wet scrubber (97%), based on test data	97
Fluoride	16984488	2874	Superphosphate (run-of-the-pile triple) production	Conventional continuous den run-tse mfg. train	30102905	0.022-0.230 lbs/ton of P2O5 produced	Controlled by 2 cyclonic scrubbers in series, average of 4 tests was 0.119 lbs/ton P2O5	195
Fluoride	16984488	2874	Superphosphate (run-of-the-pile triple) production	Conventional continuous den run-tse mfg. train	30102905	0.035-0.345 lbs/ton of P2O5 produced	Controlled by a venturi scrubber, packed-bed cyclonic scrubber, ave of 7 tests 0.195 lbs/ton P2O5	195
Fluoride	16984488	2874	Superphosphoric acid production	Vacuum evaporation process	301016	0.0005 lb/ton P2O5 input	Controlled with a packed scrubber	174
Fluoride	16984488	2899	Frit smelting	Rotary furnace	30501301	5 lb/ton charge	Uncontrolled	97
Fluoride	16984488	322	Glass manufacturing	Glass melting furnace	30501404	20 lbs/ton of glass produced	Uncontrolled emissions, pressed and blown glass furnace	191
Fluoride	16984488	3229	Glass fiber manufacture	Textile glass furnace	305012	2 lb/ton raw material processed	Uncontrolled, based on limited test data	97
Fluoride	16984488	3251	Brick manufacture	Kiln	305003	1 lb/ton brick produced	Uncontrolled, applies to tunnel or periodic kiln, gas, oil, or coal fired	97
Fluoride	16984488	329	Glass manufacturing	Glass melting furnace	30501201	0.12 lbs/ton of glass produced	Uncontrolled emissions, wool fiberglass furnace	191
Fluoride	16984488	3296	Glass fiber manufacture	Wool glass furnace - electric	30501203	0.002 lb/ton raw material processed	Uncontrolled, based on limited test data	97
Fluoride	16984488	3296	Glass fiber manufacture	Wool glass furnace - gas	305012	0.12 lb/ton raw material processed	Uncontrolled, based on limited test data	97

FINAL DRAFT

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Fluoride	16984488	3312	Steel production	Electric arc furnace/AOD vessel stresses combined	303009	0.74 lbs/ton steel	Uncontrolled emissions	198
Fluoride	16984488	3312	Steel production	Argon oxygen decarburization vessel (stainless steel)	303009	0.27 lbs/ton steel	Uncontrolled emissions	198
Fluoride	16984488	3312	Steel production	Electric arc furnace	30300908	0.004 - 0.7 lbs/ton steel	Uncontrolled emissions	198
Fluoride	16984488	3334	Primary aluminum production	Anode baking furnace	30300105	0.9 lb/ton molten Al product	Uncontrolled, gaseous fluoride, based on test data	97
Fluoride	16984488	3334	Primary aluminum production	Anode baking furnace	30300105	0.1 lb/ton molten Al product	Uncontrolled, particulate fluoride, based on test data	97
Fluoride	16984488	3334	Primary aluminum production	Anode baking furnace	30300105	0.04 lb/ton molten Al product	Gaseous fluoride, based on test data, spray tower	97
Fluoride	16984488	3334	Primary aluminum production	Anode baking furnace	30300105	0.03 lb/ton molten Al product	Particulate fluoride, based on test data, spray tower	97
Fluoride	16984488	3334	Primary aluminum production	Anode baking furnace	30300105	0.04 lb/ton molten Al product	Gaseous fluoride, based on test data, ESP	97
Fluoride	16984488	3334	Primary aluminum production	Anode baking furnace	30300105	0.03 lb/ton molten Al product	Particulate fluoride, based on test data, ESP	97
Fluoride	16984488	3334	Primary aluminum production	Anode baking furnace	30300105	0.009 lb/ton molten Al product	Gaseous fluoride, based on test data, dry alumina scrubber	97
Fluoride	16984488	3334	Primary aluminum production	Anode baking furnace	30300105	0.002 lb/ton molten Al product	Particulate fluoride, based on test data, dry alumina scrubber	97
Fluoride	16984488	3334	Primary aluminum production	Horizontal Soderberg stud cell	30300102	22 lb/ton molten Al product	Uncontrolled, gaseous fluoride, based on test data	97
Fluoride	16984488	3334	Primary aluminum production	Horizontal Soderberg stud cell	30300102	12 lb/ton molten Al product	Uncontrolled, particulate fluoride, based on test data	97
Fluoride	16984488	3334	Primary aluminum production	Horizontal Soderberg stud cell	30300109	2.2 lb/ton molten Al product	Gaseous fluoride, fugitive, based on test data	97
Fluoride	16984488	3334	Primary aluminum production	Horizontal Soderberg stud cell	30300109	1.2 lb/ton molten Al product	Particulate fluoride, fugitive, based on test data	97
Fluoride	16984488	3334	Primary aluminum production	Horizontal Soderberg stud cell	30300102	19.8 lb/ton molten Al product	Gaseous fluoride, emissions to collector, based on test data	97
Fluoride	16984488	3334	Primary aluminum production	Horizontal Soderberg stud cell	30300102	10.8 lb/ton molten Al product	Particulate fluoride, emissions to collector, based on test data	97

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Fluoride	16984488	3334	Primary aluminum production	Horizontal Soderberg stud cell	30300102	7.8 lb/ton molten Al product	Gaseous fluoride, spray tower, based on test data	97
Fluoride	16984488	3334	Primary aluminum production	Horizontal Soderberg stud cell	30300102	2.7 lb/ton molten Al product	Particulate fluoride, spray tower, based on test data	97
Fluoride	16984488	3334	Primary aluminum production	Horizontal Soderberg stud cell	30300102	0.4 lb/ton molten Al product	Gaseous fluoride, floating bed scrubber, based on test data	97
Fluoride	16984488	3334	Primary aluminum production	Horizontal Soderberg stud cell	30300102	2.4 lb/ton molten Al product	Particulate, floating bed scrubber, based on test data	97
Fluoride	16984488	3334	Primary aluminum production	Horizontal Soderberg stud cell	30300102	0.2 lb/ton molten Al product	Gaseous, scrubber plus ESP, based on test data	97
Fluoride	16984488	3334	Primary aluminum production	Horizontal Soderberg stud cell	30300102	0.2 lb/ton molten Al product	Particulate, scrubber plus ESP, based on test data	97
Fluoride	16984488	3334	Primary aluminum production	Horizontal Soderberg stud cell	30300102	1.0 lb/ton molten Al product	Gaseous, wet ESP, based on test data	97
Fluoride	16984488	3334	Primary aluminum production	Horizontal Soderberg stud cell	30300102	0.2 lb/ton molten Al product	Particulate, wet ESP, based on test data	97
Fluoride	16984488	3334	Primary aluminum production	Horizontal Soderberg stud cell	30300102	0.4 lb/ton molten Al product	Gaseous, dry alumina scrubber, based on test data	97
Fluoride	16984488	3334	Primary aluminum production	Horizontal Soderberg stud cell	30300102	0.2 lb/ton molten Al product	Particulate, dry alumina scrubber, based on test data	97
Fluoride	16984488	3334	Primary aluminum production	Prebake cell	30300101	6.7 lb/ton molten Al product	Gaseous fluoride, based on test data, cross flow packed bed scrubber	97
Fluoride	16984488	3334	Primary aluminum production	Prebake cell	30300101	5.6 lb/ton molten Al product	Particulate fluoride, based on test data, cross flow packed bed scrubber	97
Fluoride	16984488	3334	Primary aluminum production	Prebake cell	30300101	0.4 lb/ton molten Al product	Gaseous fluoride, based on test data, dry plus secondary scrubber	97
Fluoride	16984488	3334	Primary aluminum production	Prebake cell	30300101	0.3 lb/ton molten Al product	Particulate fluoride, based on test data, dry plus secondary scrubber	97
Fluoride	16984488	3334	Primary aluminum production	Prebake cell	30300101	1.4 lb/ton molten Al product	Gaseous fluoride, based on test data, dry ESP and spray tower	97
Fluoride	16984488	3334	Primary aluminum production	Prebake cell	30300101	3.4 lb/ton molten Al product	Particulate fluoride, based on test data, dry ESP and spray tower	97
Fluoride	16984488	3334	Primary aluminum production	Prebake cell	30300101	1.4 lb/ton molten Al product	Gaseous fluoride, based on test data, spray tower	97

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Fluoride	16984488	3334	Primary aluminum production	Prebake cell	30300101	3.8 lb/ton molten Al product	Particulate fluoride, based on test data, spray tower	97
Fluoride	16984488	3334	Primary aluminum production	Prebake cell	30300101	0.5 lb/ton molten Al product	Gaseous fluoride, based on test data, floating bed scrubber	97
Fluoride	16984488	3334	Primary aluminum production	Prebake cell	30300101	3.8 lb/ton molten Al product	Particulate fluoride, based on test data, floating bed scrubber	97
Fluoride	16984488	3334	Primary aluminum production	Prebake cell	30300101	3.4 lb/ton molten Al product	Gaseous fluoride, based on test data, coated bag filter dry scrubber	97
Fluoride	16984488	3334	Primary aluminum production	Prebake cell	30300101	0.4 lb/ton molten Al product	Particulate fluoride, based on test data, coated bag filter dry scrubber	97
Fluoride	16984488	3334	Primary aluminum production	Prebake cell	30300101	24.0 lb/ton molten Al product	Uncontrolled, gaseous fluoride, based on test data	97
Fluoride	16984488	3334	Primary aluminum production	Prebake cell	30300101	20.0 lb/ton molten Al product	Uncontrolled, particulate fluoride, based on test data	97
Fluoride	16984488	3334	Primary aluminum production	Prebake cell	30300101	22.8 lb/ton molten Al product	Gaseous fluoride, based on test data, emissions to collector	97
Fluoride	16984488	3334	Primary aluminum production	Prebake cell	30300101	19.0 lb/ton molten Al product	Particulate fluoride, based on test data, emissions to collector	97
Fluoride	16984488	3334	Primary aluminum production	Prebake cell	30300101	22.8 lb/ton molten Al product	Gaseous fluoride, based on test data, multiple cyclone	97
Fluoride	16984488	3334	Primary aluminum production	Prebake cell	30300101	4.2 lb/ton molten Al product	Particulate fluoride, based on test data, multiple cyclone	97
Fluoride	16984488	3334	Primary aluminum production	Prebake cell	30300101	0.2 lb/ton molten Al product	Gaseous fluoride, based on test data, dry alumina scrubber	97
Fluoride	16984488	3334	Primary aluminum production	Prebake cell	30300101	0.4 lb/ton molten Al product	Particulate fluoride, based on test data, dry alumina scrubber	97
Fluoride	16984488	3334	Primary aluminum production	Prebake cell/fugitives	30300108	1.2 lb/ton molten Al product	Gaseous fluoride, based on test data	97
Fluoride	16984488	3334	Primary aluminum production	Prebake cell/fugitives	30300108	1.0 lb/ton molten Al product	Particulate fluoride, based on test data	97
Fluoride	16984488	3334	Primary aluminum production	Vertical Soderberg stud cell	30300103	33 lb/ton molten Al product	Uncontr 'led, gaseous fluoride, based on test data	97
Fluoride	16984488	3334	Primary aluminum production	Vertical Soderberg stud cell	30300103	11 lb/ton molten Al product	Uncontrolled, particulate fluoride, based on test data	97

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Fluoride	16984488	3334	Primary aluminum production	Vertical Soderberg stud cell	30300110	4.9 lb/ton molten Al product	Fugitives, gaseous fluoride, based on test data	97
Fluoride	16984488	3334	Primary aluminum production	Vertical Soderberg stud cell	30300110	1.7 lb/ton molten Al product	Fugitives, particulate fluoride, based on test data	97
Fluoride	16984488	3334	Primary aluminum production	Vertical Soderberg stud cell	30300103	0.3 lb/ton molten Al product	Gaseous fluoride, dry alumina scrubber, based on test data	97
Fluoride	16984488	3334	Primary aluminum production	Vertical Soderberg stud cell	30300103	0.2 lb/ton molten Al product	Particulate fluoride, dry alumina scrubber, based on test data	97
Fluoride	16984488	3334	Primary aluminum production	Vertical Soderberg stud cell	30300103	1.5 lb/ton molten Al product	Gaseous fluoride, scrubber + ESP + spray screen + scrubber, based on test data	97
Fluoride	16984488	3334	Primary aluminum production	Vertical Soderberg stud cell	30300103	1.3 lb/ton molten Al product	Particulate fluoride, scrubber + ESP + spray screen + scrubber, based on test data	97
Fluoride	16984488	3334	Primary aluminum production	Vertical Soderberg stud cell	30300103	28.1 lb/ton molten Al product	Emissions to collector, gaseous fluoride, based on test data	97
Fluoride	16984488	3334	Primary aluminum production	Vertical Soderberg stud cell	30300103	9.3 lb/ton molten Al product	Emissions to collector, gaseous fluoride, based on test data	97
Fluoride	16984488	3334	Primary aluminum production	Vertical Soderberg stud cell	30300103	0.3 lb/ton molten Al product	Gaseous fluoride, spray tower, based on test data	97
Fluoride	16984488	3334	Primary aluminum production	Vertical Soderberg stud cell	30300103	2.3 lb/ton molten Al product	Particulate fluoride, spray tower, based on test data	97
Fluoride	16984488	3334	Primary aluminum production	Vertical Soderberg stud cell	30300103	0.3 lb/ton molten Al product	Gaseous fluoride, venturi scrubber, based on test data	97
Fluoride	16984488	3334	Primary aluminum production	Vertical Soderberg stud cell	30300103	0.4 lb/ton molten Al product	Particulate fluoride, venturi scrubber, based on test data	97
Fluoride	16984488	3334	Primary aluminum production	Vertical Soderberg stud cell	30300103	28.1 lb/ton molten Al product	Gaseous fluoride, multiple cyclones, based on test data	97
Fluoride	16984488	3334	Primary aluminum production	Vertical Soderberg stud cell	30300103	4.7 lb/ton molten Al product	Particulate fluoride, multiple cyclones, based on test data	97
Fluorine	7782414	2874	Phosphoric acid production - wet process	Condenser	30101603	61.2 lb/ton acid	Uncontrolled, based on mass balance	97
Fluorine	7782414	2874	Phosphoric acid production - wet process	Gypsum settling ponds	30101602	1.12 lb/ton acid	0.7 acres of pond needed to produce 1 ton acid	97
Fluorine	7782414	2874	Phosphoric acid production - wet process	Reactor	30101601	56.4 lb/ton	Uncontrolled, based on mass balance	97

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Formaldehyde	50000		Asphalt production	Entire process		0.00015 lb/ton asphalt produced	Control uncertain	94
Formaldehyde	50000		Coal combustion	Coal-fired boilers or furnaces, util/comeerc/industr/resi dential	1	170.5 lb/10E12 Btu	Uncontrolled, based on measured emis. factors, insuf. data to characterize emis. by boiler type	36
Formaldehyde	50000		Internal combustion engines - mobile	Automobiles (catalyst)	2	7.1 x 10E-6 - 1.136 x 10E-4 lb/mile	Based on emiss. test data, use lower value for low mileage cars/higher value for high mileage cars	106
Formaldehyde	50000		Internal combustion engines - mobile	Automobiles (catalyst)	2	1.102 x 10E-4 - 0.00183 lb/gal	Based on emiss. test data, use lower value for low mileage cars & higher value for high mileage cars	106
Formaldehyde	50000		Internal combustion engines - mobile	Automobiles (diesel)	2	4.615 x 10E-5 lb/mile	Based on emiss. test data, use lower value for low mileage cars & higher value for high mileage cars	106
Formaldehyde	50000		Internal combustion engines - mobile	Automobiles (diesel)	2	7.28 x 10E-4 lb/gal	Based on emiss. test data, use lower value for low mileage cars & higher value for high mileage cars	106
Formaldehyde	50000		Internal combustion engines - mobile	Automobiles (noncatalyst)	2	1.136 x 10E-4 lb/mile	Based on emiss. test data, use lower value for low mileage cars & higher value for high mileage cars	106
Formaldehyde	50000		Internal combustion engines - mobile	Automobiles (noncatalyst)	2	0.00183 lb/gal	Based on emiss. test data, use lower value for low mileage cars & higher value for high mileage cars	106
Formaldehyde	50000		Internal combustion engines - mobile	Heavy-duty diesel vehicles	2	1.99 x 10E-4 lb/mile	Based on emiss. test data, use lower value for low mileage cars & higher value for high mileage cars	106
Formaldehyde	50000		Internal combustion engines - mobile	Heavy-duty diesel vehicles	2	0.00121 lb/gal	Based on emis. test data, use lower value for low mileage cars & higher value for high mileage cars	106
Formaldehyde	50000		Internal combustion engines - mobile	Heavy-duty gasoline vehicles	2	2.7 x 10E-4 lb/mile	Based on emiss. test data, use lower value for low mileage cars & higher value for high mileage cars	106
Formaldehyde	50000		Internal combustion engines - mobile	Heavy-duty gasoline vehicles	2	0.00141 lb/gal	Based on emiss. test data, use lower value for low mileage cars & higher value for high mileage cars	106
Formaldehyde	50000		Internal combustion engines - mobile	Motorcycles, 2-cycle	2	1.46 x 10E-4 lb/mile	Derived from total aldehyde emissions data	106
Formaldehyde	50000		Internal combustion engines - mobile	Motorcycles, 2-cycle	2	0.007275 lb/gal	Derived from total aldehyde emissions data	106
Formaldehyde	50000		Internal combustion engines - mobile	Motorcycles, 4-cycle	2	6.04 x 10E-5 lb/mile	Derived from total aldehyde emissions data	106
Formaldehyde	50000		Internal combustion engines - mobile	Motorcycles, 4-cycle	2	0.00309 lb/gal	Derived from total aldehyde emissions data	106
Formaldehyde	50000		Internal combustion engines - mobile	Snowmobiles	2	0.0013 lb/gal	Derived from total aldehyde emissions data	106

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Formaldehyde	50000		Internal combustion engines - mobile	Turbo prop or piston aircraft	2	0.00353 lb/gal	Derived from total aldehyde emissions data	106
Formaldehyde	50000		Internal combustion engines - stationary	Gas turbines	2	9,276 lb/10E12 Btu heat input	Uncontrolled, calculated based on engineering judgement	106
Formaldehyde	50000		Internal combustion engines - stationary	Gas-fired reciprocating engines	2	13,218 lb/10E12 Btu heat input	Uncontrolled, calculated based on engineering judgement	106
Formaldehyde	50000		Internal combustion engines - stationary	Gasoline and diesel-powered industrial equipment	202	30,610 lb/10E12 Btu heat input	Uncontrolled, calculated based on engineering judgement	106
Formaldehyde	50000		Natural gas combustion	Commercial/institutional	103006	220.3 lb/10E12 Btu heat input	Control status unspecified, based on source tests	106
Formaldehyde	50000		Natural gas combustion	Domestic		997 lb/10E12 Btu heat input	Control status unspecified, based on source tests	106
Formaldehyde	50000		Natural gas combustion	Industrial	102006	88.12 lb/10E12 Btu heat input	Control status unspecified, based on source tests	106
Formaldehyde	50000		Oil combustion	Oil-fired boiler or furnace, util/commerc/industr/residential	1	405 lb/10E12 Btu	Uncontrolled, based on emissions testing	34
Formaldehyde	50000		Wood combustion	Commercial	103009	0.48 lb/ton	Uncontrolled, based on emission factor for residential woodstoves	94
Formaldehyde	50000		Wood combustion	Industrial	102009	0.48 lb/ton	Uncontrolled, based on emission factor for residential woodstoves	94
Formaldehyde	50000		Wood combustion, residential	Fireplace		3.0 lb/ton of wood burned	Uncontrolled, based on source test	58
Formaldehyde	50000		Wood combustion, residential	Small airtight woodstoves, birch wood		0.1156 lb/ton dry fuel burned	Normal high-temperature burning conditions, based on emission tests	57
Formaldehyde	50000		Wood combustion, residential	Small airtight woodstoves, birch wood		3.444 lb/ton dry fuel burned	Starved air conditions, based on emission tests	57
Formaldehyde	50000		Wood combustion, residential	Small airtight woodstoves, spruce wood		0.0828 lb/ton dry fuel burned	Normal high-temperature burning conditions, based on emission tests	57
Formaldehyde	50000		Wood combustion, residential	Small airtight woodstoves, spruce wood		0.81 lb/ton dry fuel burned	Starved air conditions, based on emission tests	57
Formaldehyde	50000		Wood combustion, residential	Woodstove		0.48 lb/ton of wood burned	Uncontrolled, based on source test	58

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Formaldehyde	50000	01	Internal combustion engines - mobile	Diesel powered construction equipment, wheeled tractor	2	0.007275 lb/gal	Derived from total aldehyde emissions data	106
Formaldehyde	50000	01	Internal combustion engines - mobile	Diesel powered farm equipment, miscellaneous	2	0.00617 lb/gal	Derived from total aldehyde emissions data	106
Formaldehyde	50000	01	Internal combustion engines - mobile	Gasoline powered farm equipment, miscellaneous	2	0.00243 lb/gal	Derived from total aldehyde emissions data	106
Formaldehyde	50000	01	Internal combustion engines - mobile	Gasoline powered farm equipment, tractor	2	0.00419 lb/gal	Derived from total aldehyde emissions data	106
Formaldehyde	50000	16	Internal combustion engines - mobile	Diesel powered construction equipment, miscellaneous	2	0.00397 lb/gal	Derived from total aldehyde emissions data	106
Formaldehyde	50000	16	Internal combustion engines - mobile	Diesel powered construction equipment, motor grader	2	0.00265 lb/gal	Derived from total aldehyde emissions data	106
Formaldehyde	50000	16	Internal combustion engines - mobile	Diesel powered construction equipment, off-highway truck	2	0.00463 lb/gal	Derived from total aldehyde emissions data	106
Formaldehyde	50000	16	Internal combustion engines - mobile	Diesel powered construction equipment, roller	2	0.00375 lb/gal	Derived from total aldehyde emissions data	106
Formaldehyde	50000	16	Internal combustion engines - mobile	Diesel powered construction equipment, scraper	2	0.00573 lb/gal	Derived from total aldehyde emissions data	106
Formaldehyde	50000	16	Internal combustion engines - mobile	Diesel powered construction equipment, tracklaying loader	2	0.0022 lb/gal	Derived from total aldehyde emissions data	106
Formaldehyde	50000	16	Internal combustion engines - mobile	Diesel powered construction equipment, tracklaying tractor	2	0.00375 lb/gal	Derived from total aldehyde emissions data	106
Formaldehyde	50000	16	Internal combustion engines - mobile	Diesel powered construction equipment, wheeled dozer	2	0.00353 lb/gal	Derived from total aldehyde emissions data	106
Formaldehyde	50000	16	Internal combustion engines - mobile	Diesel powered construction equipment, wheeled loader	2	0.00441 lb/gal	Derived from total aldehyde emissions data	106
Formaldehyde	50000	16	Internal combustion engines - mobile	Diesel powered construction equipment, wheeled tractor	2	0.00617 lb/gal	Derived from total aldehyde emissions data	106

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POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Formaldehyde	50000	16	Internal combustion engines - mobile	Gasoline powered construction equipment, miscellaneous	2	0.00264 lb/gal	Derived from total aldehyde emissions data	106
Formaldehyde	50000	16	Internal combustion engines - mobile	Gasoline powered construction equipment, motor grader	2	0.00353 lb/gal	Derived from total aldehyde emissions data	106
Formaldehyde	50000	16	Internal combustion engines - mobile	Gasoline powered construction equipment, roller	2	0.00287 lb/gal	Derived from total aldehyde emissions data	106
Formaldehyde	50000	16	Internal combustion engines - mobile	Gasoline powered construction equipment, wheeled loader	2	0.00287 lb/gal	Derived from total aldehyde emissions data	106
Formaldehyde	50000	16	Internal combustion engines - mobile	Gasoline powered construction equipment, wheeled tractor	2	0.00353 lb/gal	Derived from total aldehyde emissions data	106
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	0.39 lb/msf @ 3/4"	Survey of seven particle board plants, average	211
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	0.22 - 0.84 lb/msf @ 3/4"	Survey of four plants by Nat'l Council for Air & Stream Improvement press tem: 315-385, Excess HCHO in resin:3.2-7.7 wt%	211
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	0.51 lb/msf @ 3/4"	Survey of 4 pits by Nat'l Council for Air & Stream Improvement, aver.press tem: 339F, Excess HCHO in resin:5.9+ wt %	211
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	0.53 lb/msf @ 3/4"	% Resin(lb/100 lb board) 7.3, time: 4.8-8.7 min/pres, temp 320F, Excess HCHO in resin:6.7- wt %, 1 pit uncontrolled	211
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	0.41 - .45 lb/msf @ 3/4"	% Resin(lb/100 lb board) 7.1, time: 4.8-8.7 min/pres, temp 320F, Excess HCHO in resin:6.7- wt %, 1 pit uncontrolled	211
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	0.41 lb/msf @ 3/4"	% Resin(lb/100 lb board) 6.1, time: 4.8-8.7 min/pres, temp 320F, Excess HCHO in resin:6.7- wt %, 1 pit uncontrolled	211
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	0.57 lb/msf @ 3/4"	% Resin(lb/100 lb board) 5.9, time: 4.8-8.7 min/pres, temp 320F, Excess HCHO in resin:6.7 wt %, 1 pit uncontrolled	211
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	0.35 - 0.38 lb/msf @ 3/4"	% Resin(lb/100 lb board) 5.2-5.7, time: 4.8-8.7 min/pres, temp 320F, Excess HCHO in resin:6.7 wt %, 1 pit uncontred	211

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POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	0.39 lb/msf @ 3/4"	% Resin(lb/100 lb board) 6.2, time: 4.8-8.7 min/pres, temp 320F, Excess HCHO in resin:6.7 wt %, 1 plt uncontrol	211
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	0.31 lb/msf @ 3/4"	% Resin(lb/100 lb board) 5.7, time: 4.8-8.7 min/pres, temp 320F, Excess HCHO in resin:6.7 wt %, 1 plt uncontrol	211
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	0.25 lb/msf @ 3/4"	% Resin(lb/100 lb board) 6.1, time: 4.8-8.7 min/pres, temp 320F, Excess HCHO in resin:6.7 wt %, 1 plt uncontrol	211
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	0.59 lb/msf @ 3/4"	% Resin(lb/100 lb board) 8.8, time: 4.1-8.6 min/pres, temp 360F, Excess HCHO in resin: 7.7 wt %, 1 plt uncontrol	211
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	0.76 lb/msf @ 3/4"	% Resin(lb/100 lb board) 8.6, time: 4.1-8.6 min/pres, temp 360F, Excess HCHO in resin: 7.7 wt %, 1 plt uncontrol	211
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	0.62 lb/msf @ 3/4"	% Resin(lb/100 lb board) 8.0, time: 4.1-8.6 min/pres, temp 360F, Excess HCHO in resin: 7.7 wt %, 1 plt uncontrol	211
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	0.84 lb/msf @ 3/4"	% Resin(lb/100 lb board) 8.0, time: 4.1-8.6 min/pres, temp 360F, Excess HCHO in resin: 7.7 wt %, 1 plt uncontrol	211
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	0.22 - 0.33 lb/msf @ 3/4"	% Resin(lb/100 lb board) 8.6, time: 4.3-4.9 min/pres, temp 320F, Excess HCHO in resin: 3.2 wt %, 1 plt uncontrol	211
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	0.31 - 0.35 lb/msf @ 3/4"	% Resin(lb/100 lb board) 9.1, time: 4.3-4.9 min/pres, temp 320F, Excess HCHO in resin: 3.2 wt %, 1 plt uncontrol	211
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	0.45 - 0.49 lb/msf @ 3/4"	% Resin(lb/100 lb board) 9.9, time: 4.3-4.9 min/pres, temp 320F, Excess HCHO in resin: 3.2 wt %, 1 plt uncontrol	211
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	0.79 - 0.81 lb/msf @ 3/4"	% Resin(lb/100 lb board)10.0, time: 4.3-4.9 min/pres, temp 320F, Excess HCHO in resin: 3.2 wt %, 1 plt uncontrol	211
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	0.50 lb/msf @ 3/4"	% Resin(lb/100 lb board) 6.9, temp 310F, Excess HCHO in resin: 5.9 wt %, 1 plt uncontrol	211
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	0.44 - 0.51 lb/msf @ 3/4"	% Resin(lb/100 lb board) 6.9, temp 305F, Excess HCHO in resin: 5.9 wt %, 1 plt uncontrol	211

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	2.1 lb/msf @ 3/4"	% Resin(lb/100 lb board) 30, temp 284F, Excess HCHO in resin: 0.4 wt %, 1 plt uncontrol	211
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	1.8 lb/msf @ 3/4"	% Resin(lb/100 lb board) 30, temp 284F, Excess HCHO in resin: 0.9 wt %, 1 plt uncontrol	211
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	1.2 lb/msf @ 3/4"	% Resin(lb/100 lb board) 31, temp 284F, Excess HCHO in resin: 0.6 wt %, 1 plt uncontrol	211
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	2.2 lb/msf @ 3/4"	% Resin(lb/100 lb board) 31, temp 284F, Excess HCHO in resin: 0.6 wt %, 1 plt uncontrol	211
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	3.2 lb/msf @ 3/4"	% Resin(lb/100 lb board) 31, temp 284F, Excess HCHO in resin: 2.8 wt %, 1 plt uncontrol	211
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	4.0 lb/msf @ 3/4"	% Resin(lb/100 lb board) 32, temp 284F, Excess HCHO in resin: 4.0 wt %, 1 plt uncontrol	211
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	4.9 lb/msf @ 3/4"	% Resin(lb/100 lb board) 31, temp 284F, Excess HCHO in resin: 5.7 wt %, 1 plt uncontrol	211
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	2.4 lb/msf @ 3/4"	% Resin(lb/100 lb board) 0.4, temp 338F, Excess HCHO in resin: 30 wt %, 1 plt uncontrol	211
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	2.0 lb/msf @ 3/4"	% Resin(lb/100 lb board) 0.9, temp 338F, Excess HCHO in resin: 30 wt %, 1 plt uncontrol	211
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	3.4 lb/msf @ 3/4"	% Resin(lb/100 lb board) 0.4, temp 338F, Excess HCHO in resin: 31 wt %, 1 plt uncontrol	211
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	2.6 lb/msf @ 3/4"	% Resin(lb/100 lb board) 0.6, temp 338F, Excess HCHO in resin: 31 wt %, 1 plt uncontrol	211
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	3.1 lb/msf @ 3/4"	% Resin(lb/100 lb board) 1.4, temp 338F, Excess HCHO in resin: 31 wt %, 1 plt uncontrol	211
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	5.9 lb/msf @ 3/4"	% Resin(lb/100 lb board) 2.8, temp 338F, Excess HCHO in resin: 31 wt %, 1 plt uncontrol	211

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	7.1 lb/msf @ 3/4"	3 Resin(lb/100 lb board) 4.0, temp 338F, Excess HCHO in resin: 32 wt %, 1 plt uncontrol	211
Formaldehyde	50000	2493	Particle board manufacturing-wood processing	Process vents	30700703	9.9 lb/msf @ 3/4"	3 Resin(lb/100 lb board) 5.7, temp 338F, Excess HCHO in resin: 31 wt %, 1 plt uncontrol	211
Formaldehyde	50000	2493	Waferboard manufacture	Press operation	307007	0.47 lb/msf of waferboard produced	Average emission factor for three different resin systems	207
Formaldehyde	50000	2821	Melamine-formaldehyde resin production	Formaldehyde storage	407	0.04-0.4 lb/ton of 37% formaldehyde used	Uncontrolled, basis unclear	106
Formaldehyde	50000	2821	Melamine-formaldehyde resin production	Process - general	30101842	0.30-3.0 lb/ton of 37% formaldehyde used	Uncontrolled, basis unclear	106
Formaldehyde	50000	2821	Phenol-formaldehyde resin production	Formaldehyde storage	407	0.04-0.4 lb/ton of 37% formaldehyde used	Uncontrolled, basis unclear	106
Formaldehyde	50000	2821	Phenol-formaldehyde resin production	Process - general	30101805	0.30-3.0 lb/ton of 37% formaldehyde used	Uncontrolled, basis unclear	106
Formaldehyde	50000	2821	Polyacetal resin production	Formaldehyde storage	301018	0.04-0.06 lb/ton of 37% formaldehyde use	No information was available on the basis of these estimates or the types of control involved	106
Formaldehyde	50000	2821	Polyacetal resin production	Process - general	301018	0.18-0.74 lb/ton of 37% formaldehyde use	No information was available on the basis of these estimates or the types of control involved	106
Formaldehyde	50000	2821	Urea-formaldehyde resin production	Formaldehyde storage	407	0.04-0.4 lb/ton of 37% formaldehyde used	Uncontrolled, basis unclear	106
Formaldehyde	50000	2821	Urea-formaldehyde resin production	Process - general	30101832	0.3-3.0 lb/ton of 37% formaldehyde used	Uncontrolled, basis unclear	106
Formaldehyde	50000	2843	Acetone/phenol manufacture from cumene	Cleavage section vents (combined)	30120211	5.2 x 10E-7 lb/ton phenol	Controlled (unspecified), based on test data, 1977 data, average factors	125
Formaldehyde	50000	2865	Acetone/phenol manufacture from cumene	Cumene peroxidation vent	30120202	0.002 lb/ton phenol	Controlled (not specified), based on sampling, 1977 data, average factors	125
Formaldehyde	50000	2865	Phthalic anhydride production	Phthalic anhydride condensers	301019	4.2 lb/ton PA produced	Uncontrolled, no info. was available on the basis of these estimates or types of controls involved	106
Formaldehyde	50000	2865	Phthalic anhydride production	Phthalic anhydride condensers	301019	0.148 lb/ton PA produced	Controlled by direct incin., no info. was available on basis of these est. or types of control invol	106
Formaldehyde	50000	2865	Phthalic anhydride production - naphthalene process	Main process incinerator	301019	4.2 lb/ton PA produced	Uncontrolled, all aldehyde assumed to be formaldehyde	120

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Formaldehyde	50000	2865	Phthalic anhydride production - naphthalene process	Main process incinerator	301019	0.140 lb/ton PA produced	Controlled, test data and engineering judgement	120
Formaldehyde	50000	2865	Phthalic anhydride production - xylene process	Main process incinerator	301019	0.140 lb/ton PA produced	Controlled, all aldehyde assumed to be formaldehyde	120
Formaldehyde	50000	2865	Phthalic anhydride production - xylene process	Main process incinerator	301019	4.2 lb/ton PA produced	Uncontrolled, all aldehydes reported as formaldehyde	120
Formaldehyde	50000	2869	1,4-Butanediol production	Formaldehyde storage	407	0.01 - 0.4 lb/ton 37% formaldehyde used	No information was available on the basis of these estimates or the types of controls involved	106
Formaldehyde	50000	2869	1,4-Butanediol production	Process - general	301250	<1.48 lb/ton of 37% formaldehyde used	No information was available on the basis of these estimates or the types of control involved	106
Formaldehyde	50000	2869	1,4-Butanediol production	Process - general	301250	0 lb/ton of 37% formaldehyde used	Controlled by flare, no information was available on the basis of this estimate	106
Formaldehyde	50000	2869	Formaldehyde production, metal oxide catalyst process	Absorber	30112005	0.94 lb/ton of 37% formal. soln. produce	Uncontrolled, based on hypothetical plant with formal. production capacity of 9.92 x 10E7 lb/yr	106
Formaldehyde	50000	2869	Formaldehyde production, metal oxide catalyst process	Absorber	30112005	<0.018 lb/ton of 37% formal. soln. prod.	Controlled by thereal oxidation, hypothetical plant with formal. produc. cap. of 9.92 x 10E7 lb/yr	106
Formaldehyde	50000	2869	Formaldehyde production, metal oxide catalyst process	Formaldehyde storage	407	0.04 lb/ton of 37% formal. soln. produce	Uncontrolled, based on hypothetical plant with formaldehyde production cap. of 9.92 x 10E7 lb/yr	106
Formaldehyde	50000	2869	Formaldehyde production, metal oxide catalyst process	Formaldehyde storage	407	0.004 lb/ton of 37% formal. soln. prod.	Controlled by vent scrubber, hypothetical plant with formal. production cap. of 9.92 x 10E7 lb/yr	106
Formaldehyde	50000	2869	Formaldehyde production, metal oxide catalyst process	Handling	301120	0.02 lb/ton of 37% formal. soln. produce	Uncontrolled, based on hypothetical plant with formal. production capacity of 9.92 x 10E7 lb/yr	106
Formaldehyde	50000	2869	Formaldehyde production, metal oxide catalyst process	Handling	301120	0.0008 lb/ton of 37% formal. soln. prod.	Controlled by vapor recovery, hypothetical plant with formal. production cap. of 9.92 x 10E7 lb/yr	106
Formaldehyde	50000	2869	Formaldehyde production, silver catalyst process	Absorber	30112005	0.76 lb/ton of 37% formal. solution prod	Uncontrolled, based on hypothetical plant with formaldehyde production cap. of 9.92 x 10E7 lb/yr	106
Formaldehyde	50000	2869	Formaldehyde production, silver catalyst process	Absorber	30112005	<0.152 lb/ton of 37% formal. soln. prod.	Controlled by thereal oxidation, based on hypothetical plant w/ formal. prod. cap.-9.92 x 10E7 lb/yr	106

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Formaldehyde	50000	2869	Formaldehyde production, silver catalyst process	Absorber	30112005	0.192 lb/ton of 37% formal. soln. prod.	Controlled by flare, based on hypothetitical plant with formal. production cap. of 9.92 x 10E7 lb/yr	106
Formaldehyde	50000	2869	Formaldehyde production, silver catalyst process	Formaldehyde storage	407	0.06 lb/ton of 37% formal. soln. produce	Uncontrolled, based on hypothetical plant with formaldehyde production capacity of 9.92 x 10E7 lb/yr	106
Formaldehyde	50000	2869	Formaldehyde production, silver catalyst process	Formaldehyde storage	407	0.006 lb/ton of 37% formal. soln. prod.	Controlled by vent scrubber, hypothetical plant with formal. production cap. of 9.92 x 10E7 lb/yr	106
Formaldehyde	50000	2869	Formaldehyde production, silver catalyst process	Formaldehyde storage	407	<0.0012 lb/ton of 37% formal. soln. prod	Controlled by thereal oxidation, hypothetical plant with formal. produc. cap. of 9.92 x 10E7 lb/yr	106
Formaldehyde	50000	2869	Formaldehyde production, silver catalyst process	Handling	301120	0.02 lb/ton of 37% formal. soln. produce	Uncontrolled, based on hypothetical plant with formal. production capacity of 9.92 x 10E7 lb/yr	106
Formaldehyde	50000	2869	Formaldehyde production, silver catalyst process	Handling	301120	0.0006 lb/ton of 37% formal. soln. prod.	Controlled by vapor recovery, hypothetical plant with formal. production cap. of 9.92 x 10E7 lb/yr	106
Formaldehyde	50000	2869	Formaldehyde production, silver catalyst process	Product fractionator	30112006	0.66 lb/ton of 37% formal. soln. produce	Uncontrolled, based on hypothetical plant with formaldehyde production cap. of 9.92 x 10E7 lb/yr	106
Formaldehyde	50000	2869	Formaldehyde production, silver catalyst process	Product fractionator	30112006	0 lb/ton of 37% formal. solution pr	Recycle to absorber, based on hypothetical plant with formaldehyde produc. cap. of 9.92 x 10E7 lb/yr	106
Formaldehyde	50000	2869	Formaldehyde production, silver catalyst process	Product fractionator	30112006	0.034 lb/ton of 37% formal. soln. prod.	Controlled by water scrubber, hypothetical plant with formal. production cap. of 9.92 x 10E7 lb/yr	106
Formaldehyde	50000	2869	Formaldehyde production, silver catalyst process	Startup vent	301120	0.2 lb/ton of 37% formal. soln. produced	Uncontrolled, based on hypothetical plant with formaldehyde production cap. of 9.92 x 10E7 lb/yr	106
Formaldehyde	50000	2869	Hexamethylene-tetramine production	Formaldehyde storage	407	0.1 lb/ton of 37% formaldehyde used	No information was available on the basis of these estimates or the types of control involved	106
Formaldehyde	50000	2869	Hexamethylene-tetramine production	Process - general	30103425	<0.78 lb/ton of 37% formaldehyde used	No information was available on the basis of these estimates or the types of control involved	106
Formaldehyde	50000	2869	Pentaerythritol production	Formaldehyde storage	407	0.004-0.66 lb/ton of 37% formal. used	No information was available on the basis of these estimates or the types of control involved	106
Formaldehyde	50000	2869	Pentaerythritol production	Process - general	301250	2.4-9.4 lb/ton of 37% formaldehyde used	No information was available on the basis of these estimates or the types of control involved	106
Formaldehyde	50000	2869	Trimethylolpropane production	Formaldehyde storage	301250	0.02 lb/ton of 37% formaldehyde used	No information was available on the basis of these estimates or the types of controls involved	106
Formaldehyde	50000	2869	Trimethylolpropane production	Process - general	301250	0.148 lb/ton of 37% formaldehyde used	No information was available on the basis of these estimates or the types of controls involved	106
Formaldehyde	50000	2873	Urea (solid) production	Drum granulation	30104004	0.011 lb/ton of solid urea produced	Uncontrolled, based on source tests	106

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Formaldehyde	50000	2873	Urea (solid) production	Drum granulation	30104004	0.0084 lb/ton of solid urea produced	Controlled by wet scrubber, based on source tests	104
Formaldehyde	50000	2873	Urea (solid) production	Fluidized bed prilling (agricultural grade)	30104010	0.019 lb/ton of solid urea produced	Uncontrolled, based on source tests	104
Formaldehyde	50000	2873	Urea (solid) production	Fluidized bed prilling (agricultural grade)	30104010	0.0008 lb/ton of solid urea produced	Controlled by wet scrubber, based on source tests	104
Formaldehyde	50000	2873	Urea (solid) production	Fluidized bed prilling (feed grade)	30104011	0.004 lb/ton of solid urea produced	Uncontrolled, based on source tests	104
Formaldehyde	50000	2873	Urea (solid) production	Fluidized bed prilling (feed grade)	30104011	0.001 lb/ton of solid urea produced	Controlled by wet scrubber, based on source tests	104
Formaldehyde	50000	2911	Petroleum refinery	Fluid coker burner	30601201	1.19 lb/1000 bbl fresh feed	Controlled with CO boiler/ESP, derived from emission test data for total aldehydes	104
Formaldehyde	50000	2911	Petroleum refinery	Fluidized bed catalytic cracker unit regenerator	30600201	4.84 lb/1000 bbl fresh feed	Controlled with CO boiler/ESP, derived from emission test data for total aldehydes	104
Formaldehyde	50000	2911	Petroleum refinery	Moving bed (TCC) regenerator	30600301	2.2 lb/1000 bbl fresh feed	Controlled with CO boiler/ESP, derived from emission test data for total aldehydes	104
Formaldehyde	50000	2951	Asphaltic concrete production	Plant stack	305002	0.00015 lb/ton concrete	Based on limited test data, cyclone/wet scrubber control	97
Formaldehyde	50000	3296	Fiber attenuation wool glass fiber production	R-11 product production, total line	315012	9.7 lb/ton finished product	Controlled with an HVAF	173
Formaldehyde	50000	3296	Fiber attenuation wool glass fiber production	R-11 product production, curing	315012	1.0 lb/ton finished product	Controlled with an HVAF	173
Formaldehyde	50000	3296	Fiber attenuation wool glass fiber production	Ductboard production, total line	315012	19.5 lb/ton finished product	Controlled with an HVAF	173
Formaldehyde	50000	3296	Fiber attenuation wool glass fiber production	Ductboard production, curing and cooling	315012	0.80 lb/ton finished product	Controlled with an HVAF	173
Formaldehyde	50000	3296	Rotary spin wool glass fiber production	Ductboard production	30501204	3.6 lb/ton finished product	Uncontrolled, may not represent all organics in exhaust stream	97
Formaldehyde	50000	3296	Rotary spin wool glass fiber production	Heavy density product production	30501204	0.05 lb/ton finished product	Uncontrolled, may not represent all organics in exhaust stream	97
Formaldehyde	50000	3296	Rotary spin wool glass fiber production	R-19/R-11 production	30501204	0.9 lb/ton finished product	Uncontrolled, may not represent all organics in exhaust stream	97
Formaldehyde	50000	3296	Rotary spin wool glass fiber production	R-14 product production, curing and cooling	315012	0.1 lb/ton finished product	Controlled with a venturi scrubber	173

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Formaldehyde	50000	3296	Rotary spin wool glass fiber production	R-14 product production, forming	315012	0.6 lb/ton finished product	Controlled with a venturi scrubber	173
Formaldehyde	50000	3296	Rotary spin wool glass fiber production	R-19 product production, curing and cooling	315012	0.1 lb/ton finished product	Controlled with a wet scrubber	173
Formaldehyde	50000	3296	Rotary spin wool glass fiber production	R-19 product production, forming	315012	0.6 lb/ton finished product	Controlled with a wet scrubber	173
Formaldehyde	50000	3296	Rotary spin wool glass fiber production	R-11 product production	315012	0.50 lb/ton finished product	Controlled with a wet ESP	173
Formaldehyde	50000	3296	Rotary spin wool glass fiber production	R-11 product production	315012	0.1 lb/ton finished product	Controlled with an HVAP	173
Formaldehyde	50000	3296	Rotary spin wool glass fiber production	Heavy density insulation production	315012	0.4 lb/ton finished product	Controlled with an incineration	173
Formaldehyde	50000	3296	Rotary spin wool glass fiber production	Ductboard production	315012	0.5 lb/ton finished product	Controlled with a wet ESP	173
Formaldehyde	50000	3296	Rotary spin wool glass fiber production	R-14 product production	315012	0.6 lb/ton finished product	Controlled with a wet ESP	173
Formaldehyde	50000	3296	Rotary spin wool glass fiber production	R-11 product production, forming and curing	315012	0.4 lb/ton finished product	Controlled with a wet ESP	173
Formaldehyde	50000	3296	Rotary spin wool glass fiber production	Cooling process	30501206	0.052 lb/ton finished product	Uncontrolled, average emission factor for 4 different sized facilities	173
Formaldehyde	50000	3296	Rotary spin wool glass fiber production	Curing process	30501206	0.30 lb/ton finished product	Uncontrolled, average emission factor for 4 different sized facilities	173
Formaldehyde	50000	3296	Rotary spin wool glass fiber production	Forming process	30501204	3.02 lb/ton finished product	Uncontrolled, average emission factor for 4 different sized facilities	173
Formaldehyde	50000	401	Internal combustion engines - mobile	Locomotives	2	0.00331 lb/gal	Derived from total aldehyde emission test data	104
Formaldehyde	50000	45	Internal combustion engines - mobile	Jet aircraft	2	0.00419 lb/gal	Derived from total aldehyde emissions data	104
Formaldehyde	50000	4953	Municipal waste combustion	Existing mass burn heat recovery facility	501001	0.0104 lb/ton of waste combusted	Controlled by ESP, based on source tests	118
Formaldehyde	50000	4953	Municipal waste combustion	Existing mass burn heat recovery facility	501001	0.0006 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Formaldehyde	50000	4953	Municipal waste combustion	Mass burn, nonheat recovery facility	501001	0.0104 lb/ton of waste combusted	Controlled by ESP, based on source tests	118

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Formaldehyde	50000	4953	Municipal waste combustion	Mass burn, nonheat recovery facility	501001	0.0006 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Formaldehyde	50000	4953	Municipal waste combustion	Modular incinerator	501001	0.0026 lb/ton of waste combusted	Controlled by ESP, based on source tests	118
Formaldehyde	50000	4953	Municipal waste combustion	Modular incinerator	501001	1.6 x 10E-4 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Formaldehyde	50000	4953	Municipal waste combustion	Projected or state-of-the-art mass burn heat recovery facility	501001	0.005 lb/ton of waste combusted	Controlled by ESP, based on source test	118
Formaldehyde	50000	4953	Municipal waste combustion	Projected or state-of-the-art mass burn heat recovery facility	501001	0.0004 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Formaldehyde	50000	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	0.0022 lb/ton of waste combusted	Controlled by ESP, based on source tests	118
Formaldehyde	50000	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	1.4 x 10E-4 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Formaldehyde	50000	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	1.2 x 10E-6 lb/ton RDF combusted	100% RDF fuel only, ESP control only, overall average of several source averages, range is 8.6 x 10E-7 - 1.6 x 10E-6 lb/ton	180
Formaldehyde	50000	4953	Municipal waste combustion	Modular starved-air combustor	501001	3.0 x 10E-6 lb/ton feed	ESP control only, one data point only	180
Formaldehyde	50000	4953	Municipal waste combustion	Modular starved-air combustor	501001	2.8 x 10E-6 lb/ton feed	Uncontrolled, overall average of several source averages, range is 2.8 x 10E-7 - 5.2 x 10E-6 lb/ton	180
Formaldehyde	50000	4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	0.005 lb/ton up/Mg feed	Capacity > 400 tons/day, ESP control only, one data point only	180
Formaldehyde	50000	4953	Municipal waste combustion	Mass burn waterwall combustor, built before 1980	501001	1.5 x 10E-5 lb/ton feed	ESP control only, one data point only	180
Formaldehyde	50000	5032	Asphalt distribution/use	Entire process		0.004 lb/ton asphalt applied	Formaldehyde assumed to be 0.5% of THC	92
Gasoline	8006619	421	Tank truck transport	Tank truck loaded with product - extreme losses	406001	0.00417 lb/1000 gal transported	Average of range determined from engineering estimate, RVP = 10 psia	97
Gasoline	8006619	421	Tank truck transport	Tank truck loaded with product - typical losses	406001	0.00417 lb/1000 gal transported	Average of range determined from engineering estimate, RVP = 10 psia	97

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Gasoline	8006619	421	Tank truck transport	Tank truck unloaded - entrees losses	404001	0.225 lb/1000 gal transported	Average of range determined from engineering estimate, RVP = 10 psia	97
Gasoline	8006619	421	Tank truck transport	Tank truck unloaded - typical losses	404001	0.0842 lb/1000 gal transported	Average of range determined from engineering estimate, RVP = 10 psia	97
Gasoline	8006619	5171	Gasoline loading at bulk terminals and bulk plants	Bulk terminal vapor processor	40400152	0.0459 lb/1000 gal gasoline loaded	Controlled by carbon absorber, average of 33 tests, range was 0.0028 - 0.13 lb/1000 gal	188
Gasoline	8006619	5171	Gasoline loading at bulk terminals and bulk plants	Bulk terminal vapor processor	40400152	0.18 - 0.35 lb/1000 gal gasoline loaded	Controlled by refrigeration	188
Gasoline	8006619	5171	Gasoline loading at bulk terminals and bulk plants	Bulk terminal vapor processor	40400152	0.0017 - 0.01 lb/1000 gal gasoline loaded	Controlled by thermal oxidation	188
Gasoline	8006619	5171	Gasoline loading of tank trucks at bulk plants	Splash loading - dedicated normal service	404002	11.93 lb/10E3 gal throughput	Engineering estimate, RVP = 10 psia	97
Gasoline	8006619	5171	Gasoline loading of tank trucks at bulk plants	Splash loading - vapor balance service	404002	8.18 lb/10E3 gal throughput	Engineering estimate, RVP = 10 psia	97
Gasoline	8006619	5171	Gasoline loading of tank trucks at bulk plants	Submerged loading - dedicated normal service	404002	4.92 lb/10E3 gal throughput	Engineering estimate, RVP = 10 psia	97
Gasoline	8006619	5171	Gasoline loading of tank trucks at bulk plants	Submerged loading - vapor balance service	404002	8.18 lb/10E3 gal throughput	Engineering estimate, RVP = 10 psia	97
Gasoline	8006619	5171	Gasoline loading of tank trucks at bulk terminals	Splash loading - dedicated normal service	404001	11.93 lb/10E3 gal transferred	Engineering estimate using RVP of 10 psia	97
Gasoline	8006619	5171	Gasoline loading of tank trucks at bulk terminals	Splash loading - vapor balance service	404001	8.18 lb/10E3 gal transferred	Engineering estimate using RVP of 10 psia	97
Gasoline	8006619	5171	Gasoline loading of tank trucks at bulk terminals	Submerged loading - dedicated normal service	404001	4.92 lb/10E3 gal transferred	Engineering estimate using RVP of 10 psia	97
Gasoline	8006619	5171	Gasoline loading of tank trucks at bulk terminals	Submerged loading - vapor balance service	404001	8.18 lb/10E3 gal transferred	Engineering estimate using RVP of 10 psia	97
Gasoline	8006619	5171	Gasoline storage at bulk plants	Storage tanks - breathing loss	404002	2.67 x 10E-4 lb/10E3 gal throughput	Uncontrolled, engineering estimate, assume fixed roof	50
Gasoline	8006619	5171	Gasoline storage at bulk plants	Storage tanks - draining loss	404002	2 x 10E-4 lb/10E3 gal throughput	Uncontrolled, engineering estimate, assume fixed roof	50
Gasoline	8006619	5171	Gasoline storage at bulk plants	Storage tanks - filling losses	404002	5.09 x 10E-4 lb/10E3 gal throughput	Uncontrolled, engineering estimate, assume fixed roof	50
Gasoline	8006619	5171	Gasoline storage at bulk terminals	Fixed-roof storage tanks - breathing losses	404001	0.212 lb/10E3 gal throughput	Converted from lb/yr, assume 365 days of operation, equal throughput for each tank	50

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Gasoline	8006619	5171	Gasoline storage at bulk terminals	Fixed-roof storage tanks - working losses	404001	0.822 lb/10E3 gal throughput	Converted from lb/yr, assume 365 days of operation, equal throughput for each tank	90
Gasoline	8006619	5171	Gasoline storage at bulk terminals	Floating-roof storage tanks - storage losses	404001	0.231 lb/10E3 gal throughput	Converted from lb/yr, assume 365 days of operation, equal throughput for each tank	90
Gasoline	8006619	5171	Gasoline storage at bulk terminals	Floating-roof storage tanks - working losses	404001	1.48 x 10E-7 lb/10E3 gal throughput	Converted from lb/yr, assume 365 days of operation, equal throughput for each tank	90
Gasoline	8006619	5541	Gasoline marketing activities	Refueling operations - displacement losses (controlled)	406004	1.10 lb/1000 gal throughput	Engineering estimate, RVP = 10 psia	97
Gasoline	8006619	5541	Gasoline marketing activities	Refueling operations - displacement losses (uncontrolled)	406004	11.01 lb/1000 gal throughput	Engineering estimate, RVP = 10 psia	97
Gasoline	8006619	5541	Gasoline marketing activities	Refueling operations - spillage	406004	0.668 lb/1000 gal throughput	Engineering estimate, RVP = 10 psia	97
Gasoline	8006619	5541	Gasoline storage at service stations	Balanced submerged filling of underground tanks	40600306	0.334 lb/1000 gal throughput	Engineering estimate, RVP = 10 psia	97
Gasoline	8006619	5541	Gasoline storage at service stations	Splash filling of underground tanks	40600301	11.52 lb/1000 gal throughput	Engineering estimate, RVP = 10 psia	97
Gasoline	8006619	5541	Gasoline storage at service stations	Submerged filling of underground tanks	40600302	7.344 lb/1000 gal throughput	Engineering estimate, RVP = 10 psia	97
Gasoline	8006619	5541	Gasoline storage at service stations	Tank breathing and emptying	406003	1.0 lb/1000 gal throughput	Engineering estimate, RVP = 10 psia	97
Heptachlorodibenzofurans, total		26	Pulp/paper mill, kraft paper recovery boilers	Stack	307001	0.14 - 0.50 ng/dscm @ 3% O2	Three locations tested	115
Heptachlorodibenzofurans, total		3341	Secondary copper smelting	Stack	304002	11,000 ng/dscm @ 3% O2	Estimated value from stack test results	115
Heptachlorodibenzofurans, total		49	Drum and barrel furnace	Stack	5	2.0 ng/dscm @ 3% O2	Tier 4 stack test sampling	115
Heptachlorodibenzofurans, total		49	Industrial carbon regeneration	Stack		0.61 ng/dscm @ 3% O2	Tier 4 stack testing	115
Heptachlorodibenzofurans, total		49	Sewage sludge incineration	Stack	5	Not detectable - 40 ng/dscm @ 3% O2	Three locations tested, does not include 2,3,7,8-isomer, detection limit <0.1 ng/dscm @ 3% O2	115
Heptachlorodibenzofurans, total		49	Wire reclamation incineration	Stack	5	230 ng/dscm @ 3% O2	Estimated value from stack test results	115

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Heptachlorodibenzofurans, total		49	Wood combustion	Stack, industrial wood-fired boiler	102009	4.5 ng/dscm @ 3% O2	Salt-laden wood, Tier 4 stack testing	115
Heptachlorodibenzofurans, total		4953	Municipal waste combustion	Mass burn, water wall incinerator	5	2.35 - 2560 ng/Nm3 @ 12% CO2	n = 10, 6 locations, controlled with an ESP	118
Heptachlorodibenzofurans, total		4953	Municipal waste combustion	Mass burn, water wall incinerator	5	1.84E x 10E-7 - 1.43 x 10E-5 lb/ton feed	n = 6, 4 locations, controlled with an ESP	118
Heptachlorodibenzofurans, total		806	Hospital waste incineration	Incinerator	50200505	3.07 x 10E-6 lb/ton feed	Uncontrolled, test data	147
Heptachlorodibenzo-p-dioxins, total		26	Pulp/paper mill, kraft paper recovery boilers	Stack	307001	0.18 - 0.88 ng/dscm @ 3% O2	Three locations tested	115
Heptachlorodibenzo-p-dioxins, total		334	Secondary copper smelting	Stack	304002	5900 ng/dscm @ 3% O2	Estimated value from stack test results	115
Heptachlorodibenzo-p-dioxins, total		49	Drum and barrel furnace	Stack	5	1.3 ng/dscm @ 3% O2	Tier 4 stack test sampling	115
Heptachlorodibenzo-p-dioxins, total		49	Industrial carbon regeneration	Stack		0.90 ng/dscm @ 3% O2	Tier 4 stack testing	115
Heptachlorodibenzo-p-dioxins, total		49	Sewage sludge incineration	Stack	5	0.22 - 21 ng/dscm @ 3% O2	Three locations tested	115
Heptachlorodibenzo-p-dioxins, total		49	Wire reclamation incineration	Stack	5	130 ng/dscm @ 3% O2	Estimated value from stack test results	115
Heptachlorodibenzo-p-dioxins, total		49	Wood combustion	Stack, industrial wood-fired boiler	102009	39 ng/dscm @ 3% O2	Salt-laden wood, Tier 4 stack testing	115
Heptachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	Mass burn, water wall incinerator	5	4.43 - 2880 ng/Nm3 @ 12% CO2	n = 10, 6 locations, controlled with an ESP	118
Heptachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	Mass burn, water wall incinerator	5	3.48 x 10E-8 - 1.464 x 10E-5 lb/ton feed	n = 6, 4 locations, controlled with an ESP	118
Heptachlorodibenzo-p-dioxins, total		806	Hospital waste incineration	Incinerator	50200505	1.65 x 10E-6 lb/ton feed	Uncontrolled, test data	147
Hexachlorobenzene	118741	072	Fungicide application - pentachloronitrobenzene	Application process	302	2 lbs/ton fungicide used	Assumes content = 0.1%, all volatilized - worst case situations	49
Hexachlorobenzene	118741	072	Herbicide application - Dacthal	Application process	302	2 lbs/ton herbicide used	Assumes content = 0.1%, all volatilized - worst case situations	49
Hexachlorobenzene	118741	4953	Landfill of HCB waste	Fugitive emissions	501006	3.66 x 10E-9 lb/acre/day	Based on engineering estimates, assumes landfill conditions, HCB volatilization	49

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Hexachlorobenzene	118741	4953	Landfill of HCB waste	Fugitive emissions	502006	3.44 x 10E-9 lb/acre/day	Based on engineering estimates, assumes landfill conditions, HCB volatilization	69
Hexachlorobenzene	118741	4953	Wastewater treatment	POTW	50100701	520 lb/ton hexachlorobenz. in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	40
1,2,3,4,5,5-Hexachloro-1,3-cyclopentadiene	77474	2869	Hexachlorocyclopentadiene production	Chlorination reactor vent	301	10.4 lb/ton produced	Based on engineering judgement	13
1,2,3,4,5,5-Hexachloro-1,3-cyclopentadiene	77474	2869	Hexachlorocyclopentadiene production	Fugitive emissions/equipment leaks	301	4 lb/ton produced	Based on engineering judgement	13
1,2,3,4,5,5-Hexachloro-1,3-cyclopentadiene	77474	2869	Hexachlorocyclopentadiene production	Storage	407	1.4 lb/ton produced	Based on engineering judgement	13
1,2,3,4,5,5-Hexachloro-1,3-cyclopentadiene	77474	2879	Pesticide manufacturing	Fugitive emissions	301033	0.25 lb/ton used	Based on engineering judgement	13
1,2,3,4,5,5-Hexachloro-1,3-cyclopentadiene	77474	2879	Pesticide manufacturing	Process - general	301033	0.65 lb/ton used	Based on engineering judgement	13
1,2,3,4,5,5-Hexachloro-1,3-cyclopentadiene	77474	2879	Pesticide manufacturing	Storage	301033	0.10 lb/ton used	Based on engineering judgement	13
1,2,3,4,7,8-Hexachlorodibenzofuran		4953	Municipal waste combustion	Mass burn, water wall incinerator	5	0.67 - 13 ng/Nm3 @ 12% CO2	n = 3, 3 locations, controlled with an ESP	118
1,2,3,6,7,8-Hexachlorodibenzofuran		4953	Municipal waste combustion	Mass burn, water wall incinerator	5	0.27 - 7.8 ng/Nm3 @ 12% CO2	n = 4, 3 locations, controlled with an ESP	118
1,2,3,7,8,9-Hexachlorodibenzofuran		4953	Municipal waste combustion	Mass burn, water wall incinerator	5	0 - 4.3 ng/Nm3 @ 12% CO2	n = 4, 3 locations, controlled with an ESP	118
Hexachlorodibenzofurans, total		26	Pulp/paper mill, kraft paper recovery boilers	Stack	307001	0.07 - 0.59 ng/dscm @ 3% O2	Three locations tested	115
Hexachlorodibenzofurans, total		3341	Secondary copper smelting	Stack	304002	4000 ng/dscm @ 3% O2	Estimated value from stack test results	115
Hexachlorodibenzofurans, total		49	Drum and barrel furnace	Stack	5	3.0 ng/dscm @ 3% O2	Tier 4 stack test sampling	115
Hexachlorodibenzofurans, total		49	Industrial carbon regeneration	Stack		0.59 ng/dscm @ 3% O2	Tier 4 stack testing	115
Hexachlorodibenzofurans, total		49	Sewage sludge incineration	Stack	5	0.10 - 32 ng/dscm @ 3% O2	Three locations tested, does not include 2,3,7,8-isomer	115
Hexachlorodibenzofurans, total		49	Wire reclamation incineration	Stack	5	65 ng/dscm @ 3% O2	Estimated value from stack test results	115

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POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Hexachlorodibenzofurans, total		49	Wood combustion	Stack, industrial wood-fired boiler	102009	15 ng/dscm @ 3% O2	Salt-laden wood, Tier 4 stack testing	115
Hexachlorodibenzofurans, total		4953	Municipal waste combustion	Mass burn, water wall incinerator	5	1.82 - 3980 ng/Nm3 @ 12% CO2	n = 10, 6 locations, controlled with an ESP	118
Hexachlorodibenzofurans, total		4953	Municipal waste combustion	Mass burn, water wall incinerator	5	1.432 x 10E-8 - 2.02 x 10E-5 lb/ton feed	n = 6, 4 locations, controlled with an ESP	118
Hexachlorodibenzofurans, total		806	Hospital waste incineration	Incinerator	50200505	2.97 x 10E-6 lb/ton feed	Uncontrolled, test data	167
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	57653857	4953	Municipal waste combustion	Mass burn, water wall incinerator	5	0.15 - 6.1 ng/Nm3 @ 12% CO2	n = 6, 4 locations, controlled with an ESP	118
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	34465468	4953	Municipal waste combustion	Mass burn, water wall incinerator	5	0.37 - 11 ng/Nm3 @ 12% CO2	n = 6, 4 locations, controlled with an ESP	118
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408743	4953	Municipal waste combustion	Mass burn, water wall incinerator	5	0 - 4.6 ng/Nm3 @ 12% CO2	n = 6, 4 locations, controlled with an ESP	118
Hexachlorodibenzo-p-dioxins, total		26	Pulp/paper mill, kraft paper recovery boilers	Stack	307001	0.06 - 0.39 ng/dscm @ 3% O2	Three locations tested	115
Hexachlorodibenzo-p-dioxins, total		3341	Secondary copper smelting	Stack	304002	2200 ng/dscm @ 3% O2	Estimated value from stack test results	115
Hexachlorodibenzo-p-dioxins, total		49	Drum and barrel furnace	Stack	5	0.79 ng/dscm @ 3% O2	Tier 4 stack test sampling	115
Hexachlorodibenzo-p-dioxins, total		49	Industrial carbon regeneration	Stack		0.98 ng/dscm @ 3% O2	Tier 4 stack testing	115
Hexachlorodibenzo-p-dioxins, total		49	Sewage sludge incineration	Stack	5	Not detectable - 7.0 ng/dscm @ 3% O2	Three locations tested, detection limit <0.1 ng/dscm @ 3% O2	115
Hexachlorodibenzo-p-dioxins, total		49	Wire reclamation incineration	Stack	5	14 ng/dscm @ 3% O2	Estimated value from stack test results	115
Hexachlorodibenzo-p-dioxins, total		49	Wood combustion	Stack, industrial wood-fired boiler	102009	49 ng/dscm @ 3% O2	Salt-laden wood, Tier 4 stack testing	115
Hexachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	Mass burn, water wall incinerator	5	5.1 - 3190 ng/Nm3 @12% CO2	n = 10, 6 locations, controlled with an ESP	118
Hexachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	Mass burn, water wall incinerator	5	3.2 x 10E-8 - 1.418 x 10E-5 lb/ton feed	n = 6, 4 locations, controlled with an ESP	118
Hexachlorodibenzo-p-dioxins, total		806	Hospital waste incineration	Incinerator	50200505	0.75 x 10E-6 lb/ton feed	Uncontrolled, test data	167

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
1-Hexene	592416	191	Agricultural industry-field burning of plastic crop covers	Used black plastic		0.499 mg/m3 of plastic	Experimental simulation, plastic sheet = 1 lb.,estimated from average benzene and toluene response	210
1-Hexene	592416	191	Agricultural industry-field burning of plastic crop covers	Unused black plastic		0.336 mg/m3 of plastic	Experimental simulation, plastic sheet = 1 lb.,estimated from average benzene and toluene response	210
1-Hexene	592416	191	Agricultural industry-field burning of plastic crop covers	Used black plastic		0.098 mg/m3 of plastic	Experimental simulation, plastic sheet = 1 lb.,estimated from average benzene and toluene response	210
1-Hexene	592416	191	Agricultural industry-field burning of plastic crop covers	Unused black plastic		0.023 mg/m3 of plastic	Experimental simulation, plastic sheet = 1 lb.,estimated from average benzene and toluene response	210
Hydrogen chloride	7647010		Coal combustion, industrial	Bituminous coal industrial boiler	102002	78.8 lbs/10E9 BTU	Based on rate of production	181
Hydrogen chloride	7647010		Coal combustion, industrial	Antracite coal industrial boiler	102001	35.5 lbs/10E9 BTU	Based on rate of production	181
Hydrogen chloride	7647010		Coal combustion, industrial	Lignite coal industrial boiler	102003	1.0 lbs/10E9 BTU	Based on rate of production	181
Hydrogen chloride	7647010		Coal combustion, residential	Bituminous coal residential boiler		60.9 lbs/10E9 BTU		181
Hydrogen chloride	7647010		Coal combustion, residential	Anthracite coal residential boiler		120 lbs/10E9 BTU		181
Hydrogen chloride	7647010		Coal combustion, residential	Lignite coal residential boiler		36.1 lbs/10E9 BTU		181
Hydrogen chloride	7647010		Waste oil combustion	Waste oil-fired boilers (<150 million Btu/h) or space heaters	1	91.32 lb/1000 gal oil burned	Uncontrolled, based on emissions data and engineering judgement	99
Hydrogen chloride	7647010	2819	Hydrochloric acid manufacture - by-product process	Entire process	30101101	0-0.5 lbs/ton acid produced		34
Hydrogen chloride	7647010	2819	Hydrochloric acid manufacture - by-product process	By-product HCl	301011	3.0 lbs/ton	Based on rate of production, w/out final scrubber	181, 97
Hydrogen chloride	7647010	2819	Hydrochloric acid manufacture - by-product process	By-product HCl	301011	0.2 lbs/ton	Based on rate of production, controlled with scrubber	181
Hydrogen chloride	7647010	2819	Hydrochloric acid manufacture - mannhein process	Entire process		1.3 to 3.8 lb/ton acid produced		34

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Hydrogen chloride	7647010	2819	Hydrochloric acid manufacture - synthesis process	Entire process		0 to <0.035 lb/ton acid produced		34
Hydrogen chloride	7647010	2821	Polyvinyl chloride production	Suspension process, entire plant	30101801	4.2 x 10E-4 lb/ton PVC	Based on a model plant, 1978 data, 1.8 x 10E8 lb capacity, control status not certain	138
Hydrogen chloride	7647010	2822	Neoprene manufacture	Aqueous waste vent	301026	2 x 10E-5 lb/ton neoprene	Engineering Judgement	123
Hydrogen chloride	7647010	2822	Neoprene manufacture	Chloroprene vent condenser	301026	0.004 lb/ton neoprene	Engineering Judgement	123
Hydrogen chloride	7647010	2822	Neoprene manufacture	Incinerator	301026	0.032 lb/ton neoprene	Engineering Judgement	123
Hydrogen chloride	7647010	2869	Propylene oxide production		30120501	7.46 lbs/ton	Control uncertain, based on tests and mass balance	95, 101
Hydrogen chloride	7647010	2869	Chlorobenzene prod. (mono- & di-), direct chlorination	Absorption	30112535	0.12 lb/ton produced	Control uncertain, based on tests and mass balance	95
Hydrogen chloride	7647010	2869	Epichlorohydrin production by hydrochlorination	Separation unit	301305	0.001 lb/ton produced	Control unclear, based on mass balance and testing	95
Hydrogen chloride	7647010	2869	Ethyl chloride production by hydrochlorination	Separation unit	301125	0.001 lb/ton produced	Control uncertain, based on mass balance and tests	95
Hydrogen chloride	7647010	2869	Ethylene dichloride production - direct chlorination	Absorption	30112502	0.02 lb/ton produced	Control uncertain, based on tests and mass balance	95
Hydrogen chloride	7647010	2869	Methyl chloroform production by hydrochlorination	Heat transfer	30112525	0.02 lb/ton produced	Control uncertain, based on mass balance and tests	95
Hydrogen chloride	7647010	2869	Methyl chloroform production by hydrochlorination	Separation unit	30112525	0.02 lb/ton produced	Control uncertain, based on mass balance and tests	95
Hydrogen chloride	7647010	3312	Steel production	Steel pickling, absorber towers	30300910	0.00055-0.0011 lbs/ton steel pickled	Calculated from information in reference	133
Hydrogen chloride	7647010	4911	Coal combustion	Boiler	1	0.08-0.3 lbs/million Btu from coal		133
Hydrogen chloride	7647010	4911	Coal combustion	Boiler	1	0.00192 lb/ton coal burned	Control status unspecified	133
Hydrogen chloride	7647010	4911	Coal combustion, utility	Bituminous coal-fired cyclone utility boiler	101002	78.8 lbs/10E9 BTU	Based on rate of production	101

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Hydrogen chloride	7647010	4911	Coal combustion, utility	Anthracite coal utility boiler	101001	39.0 lbs/10E9 BTU	Based on rate of production	181
Hydrogen chloride	7647010	4911	Coal combustion, utility	Lignite coal utility boiler	101003	1.0 lbs/10E9 BTU	Based on rate of production	181
Hydrogen chloride	7647010	4953	Municipal waste combustion	Entire process	5	0.062-4.88 lbs/ton refuse	Depends on waste content, combustion conditions, control device	133
Hydrogen chloride	7647010	4953	Municipal waste combustion	Entire process	5	1.4 lb/ton refuse	For units which do not recover energy	133
Hydrogen chloride	7647010	4953	Municipal waste combustion	Entire process	5	4 lb/ton refuse	For waste-to-energy facilities	133
Hydrogen chloride	7647010	4953	Municipal waste combustion	Mass burn, heat recovery facility	501001	8.36 lb/ton of waste combusted	No HCl control, based on source tests	118
Hydrogen chloride	7647010	4953	Municipal waste combustion	Mass burn, heat recovery facility	501001	0.8 lb/ton of waste combusted	Controlled by dry alkaline scrubber, assumes 90% HCl control efficiency	118
Hydrogen chloride	7647010	4953	Municipal waste combustion	Mass burn, nonheat recovery facility	501001	8.26 lb/ton of waste combusted	No HCl control, based on source tests	118
Hydrogen chloride	7647010	4953	Municipal waste combustion	Mass burn, nonheat recovery facility	501001	0.8 lb/ton of waste combusted	Controlled by dry alkaline scrubber, assumes 90% HCl control efficiency	118
Hydrogen chloride	7647010	4953	Municipal waste combustion	Modular incinerator	501001	7.16 lb/ton of waste combusted	No HCl control, based on source tests	118
Hydrogen chloride	7647010	4953	Municipal waste combustion	Modular incinerator	501001	0.8 lb/ton of waste combusted	Controlled by dry alkaline scrubber, assumes 90% HCl control efficiency	118
Hydrogen chloride	7647010	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	5.14 lb/ton of waste combusted	No HCl control, based on source tests	118
Hydrogen chloride	7647010	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	0.6 lb/ton of waste combusted	Controlled by dry alkaline scrubber, assumes 90% HCl control efficiency	118
Hydrogen chloride	7647010	4953	Municipal waste combustion	Incinerator	501001	5.0 lbs/ton material burned		181
Hydrogen chloride	7647010	4953	Municipal waste combustion	Incinerator	503001	5.35 lbs/ton material burned		181
Hydrogen chloride	7647010	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	4.6 lb/ton RDF combusted	100% RDF fuel only, ESP control only, overall average of several source averages, range is 3.9 - 5.2 lb/ton	180
Hydrogen chloride	7647010	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	10.4 lb/ton RDF combusted	100% RDF only, uncontrolled, overall average of several source averages, range is 4.8 - 15.8 lb/ton	180

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Hydrogen chloride	7647010	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	0.048 lb/ton RDF combusted	Spray drying after acid gas and PM control, one data point only, 100% RDF fuel only	180
Hydrogen chloride	7647010	4953	Municipal waste combustion	Modular starved-air combustor	501001	9.2 lb/ton feed	ESP control only, overall average of several source averages, range is 5.2 - 14.6 lb/ton	180
Hydrogen chloride	7647010	4953	Municipal waste combustion	Modular starved-air combustor	501001	4.2 lb/ton feed	Uncontrolled, overall average of several source averages, range is 1.84 - 8.0 lb/ton	180
Hydrogen chloride	7647010	4953	Municipal waste combustion	Modular excess-air combustor	501001	4.2 lb/ton feed	Uncontrolled, overall average of several source averages, range is 0.70 - 9.2 lb/ton	180
Hydrogen chloride	7647010	4953	Municipal waste combustion	Modular excess-air combustor	501001	6.8 lb/ton feed	ESP control only, overall average of several source averages, range is 3.8 - 9.2 lb/ton	180
Hydrogen chloride	7647010	4953	Municipal waste combustion	Modular excess-air combustor	501001	0.006 lb/ton feed	Dry sorbent injection after acid gas and PM control, one data point only	180
Hydrogen chloride	7647010	4953	Municipal waste combustion	Mass burn, water wall incinerator	501001	4.4 lb/ton feed	ESP control only, one data point only	180
Hydrogen chloride	7647010	4953	Municipal waste combustion	Mass burn, water wall incinerator	501001	5.2 lb/ton feed	Uncontrolled, one data point only	180
Hydrogen chloride	7647010	4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	5.8 lb/ton feed	Capacity > 600 tons/day, ESP control only, overall average of several source averages, range is 1.92 - 9.4 lb/ton	180
Hydrogen chloride	7647010	4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	8.4 lb/ton feed	Capacity > 600 tons/day, uncontrolled, overall average of several source averages, range is 6.6 - 11 lb/ton	180
Hydrogen chloride	7647010	4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	0.22 lb/ton feed	Capacity > 600 tons/day, spray drying after acid gas and PM control, overall avg. of several source avgs., range is 0.084 - 0.34 lb/ton	180
Hydrogen chloride	7647010	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	9.0 lb/ton feed	Capacity < 600 tons/day, uncontrolled, overall average of several source averages, range is 6.2 - 11.8 lb/ton	180
Hydrogen chloride	7647010	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	6.8 lb/ton feed	Capacity < 600 tons/day, ESP control only, overall average of several source averages, range is 4.8 - 9.0 lb/ton	180
Hydrogen chloride	7647010	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	0.42 lb/ton feed	Capacity < 600 tons/day, spray drying after acid gas and PM control, overall avg. of several source avgs., range is 0.138 - 0.96 lb/ton	180
Hydrogen chloride	7647010	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	1.12 lb/ton feed	Cap. < 600 tons/day, dry sorbent injection after acid gas and PM control, overall avg. of several source avgs., range is 0.34 - 2.2 lb/ton	180

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Hydrogen chloride	7647010	4953	Municipal waste combustion	Mass burn waterwall combustor, built before 1980	501001	13 lb/ton feed	Uncontrolled, one data point only	180
Hydrogen chloride	7647010	4953	Municipal waste combustion	Mass burn waterwall combustor, built before 1980	501001	3.0 lb/ton feed	ESP control only, overall average of several source averages, range is 2.2 - 3.8 lb/ton	180
Hydrogen chloride	7647010	4953	Municipal waste combustion	Mass burn waterwall combustor, built before 1980	501001	3.6 lb/ton feed	Dry sorbent injection after acid gas and PM control, one data point only	180
Hydrogen chloride	7647010	4953	Municipal waste combustion	Mass burn, refractory facility	501001	0.062 lb/ton feed	Spray drying after acid gas and PM control, one data point only	180
Hydrogen chloride	7647010	4953	Municipal waste combustion	Mass burn, refractory facility	501001	2.8 lb/ton feed	ESP control only, overall average of several source averages	180
Hydrogen chloride	7647010	4953	Municipal waste combustion	Mass burn, refractory facility	501001	1.24 - 4.2 lb/ton feed	ESP control only, overall range of several source averages	180
Hydrogen chloride	7647010	4953	Sewage sludge incineration	Incinerator stack	50100506	1.5 lb/ton dried sludge	Uncontrolled	97
Hydrogen chloride	7647010	4953	Sewage sludge incineration	Incinerator stack	50100506	0.3 lb/ton dried sludge	Scrubber	97
Hydrogen chloride	7647010	4953	Waste incineration	Liquid waste storage	50300701	1.19 lbs/ton material burned		181
Hydrogen chloride	7647010	806	Hospital waste incineration	Two-chambered incinerator	50200505	20-32 lb/ton waste	Uncontrolled, range due to variation in waste, test of one facility	103
Hydrogen chloride	7647010	806	Hospital waste incineration	Incinerator	315020	36.7 lb/ton feed	Uncontrolled, average emission factor based on 20 facilities	167
Hydrogen chloride	7647010	806	Hospital waste incineration	Incinerator	315020	14.5 lb/ton feed	Controlled with fabric filter, based on 1 facility	167
Hydrogen chloride	7647010	806	Hospital waste incineration	Incinerator	315020	3.7 lb/ton feed	Controlled with wet scrubber, average emission factor based on 3 facilities	167
Hydrogen cyanide	74908	2869	Acrylonitrile production - SOHIO process	Absorber vent	30125404	0.4 lb/ton acrylonitrile produced	Uncontrolled, based on data from plants and EPA studies	149
Hydrogen fluoride	7664393		Coal combustion, industrial	Lignite coal-fired boilers	102003	1.2 lbs/10E9 BTU	Based upon rate of production	181
Hydrogen fluoride	7664393		Coal combustion, industrial	Anthracite coal-fired boilers	102001	7.2 lbs/10E9 BTU	Based upon rate of production	181

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Hydrogen fluoride	7664393		Coal combustion, industrial	Bituminous coal-fired boilers	102002	9.4 lbs/10E9 BTU	Based upon rate of production	101
Hydrogen fluoride	7664393		Coal combustion, residential	Lignite coal-fired boilers		6.34 lbs/10E9 BTU		101
Hydrogen fluoride	7664393		Coal combustion, residential	Anthracite coal-fired boilers		4.95 lbs/10E9 BTU		101
Hydrogen fluoride	7664393		Coal combustion, residential	Bituminous coal-fired boilers		4.87 lbs/10E9 BTU		101
Hydrogen fluoride	7664393	2819	Hydrofluoric acid manufacture	Tail gas	30101206	25 lb/ton acid	Uncontrolled, average of data for three plants	97, 101
Hydrogen fluoride	7664393	2819	Hydrofluoric acid manufacture	Tail gas	30101206	0.2 lb/ton acid	Caustic scrubber, average of data for three plants	97, 101
Hydrogen fluoride	7664393	2874	Diammonium phosphate production	Ammoniation-granulation process	301030	0.08 lbs/ton P2O5	Controlled factor	101
Hydrogen fluoride	7664393	2874	Diammonium phosphate production	Ammoniation-granulation process	30103002	0.3 lbs/ton P2O5	Uncontrolled	101
Hydrogen fluoride	7664393	2874	Diammonium phosphate production	Dryer/cooler	30103001	0.3 lbs/ton P2O5	Uncontrolled	101
Hydrogen fluoride	7664393	2874	Phosphoric acid production	Condenser	301017	0.010 lbs/ton phosphate rock processed	Controlled factor	101
Hydrogen fluoride	7664393	2874	Phosphoric acid production - wet process	Gypsum settling ponds	30101602	0.42 lbs/ton phosphate rock processed		101
Hydrogen fluoride	7664393	2874	Phosphoric acid production - wet process	Condenser	30101603	0.043 lbs/ton phosphate rock processed		101
Hydrogen fluoride	7664393	2874	Phosphoric acid production - wet process	Reactor	30101601	0.37 lbs/ton phosphate rock processed		101
Hydrogen fluoride	7664393	2874	Superphosphate (granular triple) production	Reactor/dryer	30102906	0.24 lbs/ton P2O5	Unknown control	101
Hydrogen fluoride	7664393	2874	Superphosphate (granular triple) production	Reactor/dryer	30102906	21 lbs/ton P2O5	Uncontrolled	101
Hydrogen fluoride	7664393	3255	Refractory production	Brick firing kilns	305003	0.47-1.0 lbs/ton of brick produced	Uncontrolled emissions, oil or gas firing	103
Hydrogen fluoride	7664393	3334	Primary aluminum production	Horizontal soderburg stud - fugitive	30300109	2.2 lbs/ton	Based upon rate of production	101

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Hydrogen fluoride	7664393	3334	Primary aluminum production	Horizontal Soderberg stud cell	30300102	1.9 lbs/ton	Based upon rate of production	181
Hydrogen fluoride	7664393	3334	Primary aluminum production	V S S - fugitive emissions	30300110	4.9 lbs/ton	Based upon rate of production	181
Hydrogen fluoride	7664393	3334	Primary aluminum production	Vertical Soderberg stud cell	30300103	0.6 lbs/ton	Based upon rate of production	181
Hydrogen fluoride	7664393	3334	Primary aluminum production	Prebaked fugitive emissions	30300108	1.2 lbs/ton	Based upon rate of production	181
Hydrogen fluoride	7664393	3334	Primary aluminum production	Prebaked reduction cell	30300101	4.9 lbs/ton	Based upon rate of production	181
Hydrogen fluoride	7664393	3334	Primary aluminum production	Anode baking furnace	30300105	0.52 lbs/ton	Based upon rate of production	181
Hydrogen fluoride	7664393	4911	Coal combustion, utility	Lignite coal-fired boilers	101003	1.2 lbs/10E9 BTU	Based upon rate of production	181
Hydrogen fluoride	7664393	4911	Coal combustion, utility	Anthracite coal-fired boilers	101001	7.2 lbs/10E9 BTU	Based upon rate of production	181
Hydrogen fluoride	7664393	4911	Coal combustion, utility	Bituminous coal-fired boilers	101002	9.4 lbs/10E9 BTU	Based upon rate of production	181
Hydrogen fluoride	7664393	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	0.016 lb/ton RDF combusted	100% RDF fuel only, ESP control only, one data point only	180
Hydrogen fluoride	7664393	4953	Municipal waste combustion	Modular starved-air combustor	501001	0.008 - 0.098 lb/ton feed	Uncontrolled, overall range of several source averages	180
Hydrogen fluoride	7664393	4953	Municipal waste combustion	Modular starved-air combustor	501001	0.048 lb/ton feed	Uncontrolled, overall average of several source averages	180
Hydrogen fluoride	7664393	4953	Municipal waste combustion	Modular excess-air combustor	501001	0.0016 lb/ton feed	Uncontrolled, one data point only	180
Hydrogen fluoride	7664393	4953	Municipal waste combustion	Mass burn, water wall incinerator	501001	0.032 lb/ton feed	Uncontrolled, one data point only	180
Hydrogen fluoride	7664393	4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	0.076 lb/ton feed	Capacity > 600 tons/day, ESP control only, overall average of several source averages	180
Hydrogen fluoride	7664393	4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	0.048 - 0.110 lb/ton feed	Capacity > 600 tons/day, ESP control only, overall range of several source averages	180
Hydrogen fluoride	7664393	4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	0.0094 lb/ton feed	Capacity > 600 tons/day, spray drying after acid gas and PM control, overall average of several source averages	180

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Hydrogen fluoride	7664393	4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	0.0078 - 0.011 lb/ton feed	Capacity > 600 tons/day, spray drying after acid gas and PM control, overall range of several source averages	180
Hydrogen fluoride	7664393	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	0.044 - 0.048 lb/ton feed	Capacity < 600 tons/day, ESP control only, overall range of several source averages	180
Hydrogen fluoride	7664393	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	0.046 lb/ton feed	Capacity < 600 tons/day, ESP control only, overall average of several source averages	180
Hydrogen fluoride	7664393	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	0.00032 - 0.0038 lb/ton feed	Capacity < 600 tons/day, spray drying after acid gas and PM control, overall range of several source averages	180
Hydrogen fluoride	7664393	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	0.002 lb/ton feed	Capacity < 600 tons/day, spray drying after acid gas and PM control, overall average of several source averages	180
Hydrogen fluoride	7664393	4953	Municipal waste combustion	Mass burn waterwall combustor, built before 1980	501001	0.010 lb/ton feed	ESP control only, one data point only	180
Hydrogen fluoride	7664393	4953	Municipal waste combustion	Mass burn waterwall combustor, built before 1980	501001	0.018 lb/ton feed	Uncontrolled, one data point only	180
Hydrogen fluoride	7664393	4953	Municipal waste combustion	Mass burn, refractory facility	501001	0.003 lb/ton feed	Spray drying after acid gas and PM control, one data point only	180
Hydrogen fluoride	7664393	4953	Municipal waste combustion	Mass burn, refractory facility	501001	0.082 lb/ton feed	ESP control only, overall average of several source averages	180
Hydrogen fluoride	7664393	4953	Municipal waste combustion	Mass burn, refractory facility	501001	0.046 - 0.114 lb/ton feed	ESP control only, overall range of several source averages	180
Hydrogen fluoride	7664393	4953	Municipal waste combustion	Mass burn, refractory facility	501001	0.005 lb/ton feed	Uncontrolled, one data point only	180
Hydrogen sulfide	7783064		Fish processing plants	Fish scrap cookers - fresh	30201201	0.01 lb/ton fish	Uncontrolled	97
Hydrogen sulfide	7783064		Fish processing plants	Fish scrap cookers - stale	30201202	0.2 lb/ton fish	Uncontrolled	97
Hydrogen sulfide	7783064	12	Coal refuse pile burning	Refuse pile	50300204	6 x 10E-4 lb/hr/ton burning coal refuse		134
Hydrogen sulfide	7783064	2611	Pulp/paper mill, kraft mill paper process	Batch digester (blow)	30700101	0.0-0.2 lb/ton of product	Operating conditions such as combustion temps and fuel types account for the broad range of emis.	5

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Hydrogen sulfide	7783064	2611	lp/paper mill, kraft ..ll paper process	Batch digester (relief)	30700101	0.0-0.1 lb/ton of product	Operating conditions such as combustion temps and fuel types account for the broad ranges of emis.	9
Hydrogen sulfide	7783064	2611	Pulp/paper mill, kraft mill paper process	Black liquor oxidation tower	30700109	0.0-0.02 lb/ton of product	Operating conditions such as combustion temps and fuel types account for the broad ranges of emis.	9
Hydrogen sulfide	7783064	2611	Pulp/paper mill, kraft mill paper process	Brown stock washer(s) (hood vent)	30700102	0.0-0.2 lb/ton of product	Operating conditions such as combustion temps and fuel types account for the broad ranges of emis.	9
Hydrogen sulfide	7783064	2611	Pulp/paper mill, kraft mill paper process	Brown stock washer(s) (seal vent)	30700102	0.0-0.02 lb/ton of product	Operating conditions such as combustion temps and fuel types account for the broad ranges of emis.	9
Hydrogen sulfide	7783064	2611	Pulp/paper mill, kraft mill paper process	Continuous digester	30700101	0.0-0.2 lb/ton of product	Operating conditions such as combustion temps and fuel types account for the broad ranges of emis.	9
Hydrogen sulfide	7783064	2611	Pulp/paper mill, kraft mill paper process	Direct contact evap. (oxidized black liquor)	30700109	0.1-2.0 lb/ton of product	Operating conditions such as combustion temps and fuel types account for the broad ranges of emis.	9
Hydrogen sulfide	7783064	2611	Pulp/paper mill, kraft mill paper process	Direct contact evap. (unoxidized black liquor)	30700104	5.0-30.0 lb/ton of product	Operating conditions such as combustion temps and fuel types account for the broad ranges of emis.	9
Hydrogen sulfide	7783064	2611	Pulp/paper mill, kraft mill paper process	Lime kiln and fluidized bed reactor	307001	0.0-3.76 lb/ton of product	Operating conditions such as combustion temps and fuel types account for the broad ranges of emis.	9
Hydrogen sulfide	7783064	2611	Pulp/paper mill, kraft mill paper process	Lime kiln exhaust	30700106	0.0-1.0 lb/ton of product	Operating conditions such as combustion temps and fuel types account for the broad ranges of emis.	9
Hydrogen sulfide	7783064	2611	Pulp/paper mill, kraft mill paper process	Recovery furnace (after direct contact evap.)	30700104	0.0-50.0 lb/ton of product	Operating conditions such as combustion temps and fuel types account for the broad ranges of emis.	9
Hydrogen sulfide	7783064	2611	Pulp/paper mill, kraft mill paper process	Smelt dissolving tank	30700105	0.0-2.0 lb/ton of product	Operating conditions such as combustion temps and fuel types account for the broad ranges of emis.	9
Hydrogen sulfide	7783064	2611	Pulp/paper mill, kraft mill paper process	Tall oil recovery evaporator	30700104	0.1-3.0 lb/ton of product	Operating conditions such as combustion temps and fuel types account for the broad ranges of emis.	9
Hydrogen sulfide	7783064	2611	Pulp/paper mill, kraft pulp - sulfite pulping	Brown stock washer	307001	0.02 lb/ton air-dried pulp	Untreated, based on test data	97, 178
Hydrogen sulfide	7783064	2611	Pulp/paper mill, kraft pulp - sulfite pulping	Digester relief and blow tank	30700101	0.03 lb/ton air-dried pulp	Untreated, based on test data	97, 178
Hydrogen sulfide	7783064	2611	Pulp/paper mill, kraft pulp - sulfite pulping	Lime kiln	30700106	0.5 lb/ton air-dried pulp	For untreated, scrubber or ESP	97, 178
Hydrogen sulfide	7783064	2611	Pulp/paper mill, kraft pulp - sulfite pulping	Lime kiln	30700106	0.03 lb/ton air-dried pulp	With efficient mud washing, optimal kiln operation, added caustic to scrubber water	97
Hydrogen sulfide	7783064	2611	Pulp/paper mill, kraft pulp - sulfite pulping	Multiple effect evaporator	30700103	1.1 lb/ton air-dried pulp	Untreated, based on test data	97, 178

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Hydrogen sulfide	7783064	2611	Pulp/paper mill, kraft pulp - sulfite pulping	Noncontact recovery boiler without direct contact evaporator	307001	0.1 lb/ton air-dried pulp	Apply when recovery furnace is operated optimally to control TRS	97, 178
Hydrogen sulfide	7783064	2611	Pulp/paper mill, kraft pulp - sulfite pulping	Recovery boiler and direct evaporator	30700104	12 lb/ton air-dried pulp	For venturi scrubber or ESP, can be reduced 50% with black liquor oxidation	97, 178
Hydrogen sulfide	7783064	2611	Pulp/paper mill, kraft pulp - sulfite pulping	Smelt dissolving tank	30700105	0.2 lb/ton air-dried pulp	For untreated, mesh pad or scrubber, can be lowered if low sulfite water used in tank	97, 178
Hydrogen sulfide	7783064	2611	Pulp/paper mill, kraft pulp - sulfite pulping	Turpentine condenser	30700107	0.01 lb/ton air-dried pulp	Untreated	97, 178
Hydrogen sulfide	7783064	2824	Synthetic fibers production - viscose rayon	General emissions	30102501	6 lb/ton fibers	Uncontrolled, low quality factor	97
Hydrogen sulfide	7783064	2895	Carbon black manufacture - oil furnace	CO boiler/incinerator	301005	0.22 lb/ton carbon black produced	Based on test data	97
Hydrogen sulfide	7783064	2895	Carbon black manufacture - oil furnace	Flare	301005	2 lb/ton	Based on test data	97
Hydrogen sulfide	7783064	2895	Carbon black manufacture - oil furnace	Main process purge vent	30100504	40 lb/ton carbon black produced	Based on test data	97
Hydrogen sulfide	7783064	2911	Petroleum refinery - sulfur recovery plants	Two-stage claus recovery process with scot tail gas unit	301032	0.045 lbs/ton of sulfur feed	Single test value	194
Hydrogen sulfide	7783064	2911	Petroleum refinery - sulfur recovery plants	Claus recovery process with beavon tail gas unit	301032	0.009 lbs/ton of sulfur feed	Average of 3 test runs	194
Hydrogen sulfide	7783064	2911	Petroleum refinery - sulfur recovery plants	Claus recovery process with wellman-lord scrubber	301032	0.0007-0.0045 lbs/ton of sulfur feed	Range of 6 test runs	194
Hydrogen sulfide	7783064	2911	Petroleum refinery - sulfur recovery plants	Three-stage claus recovery process with ifp-1 tail gas unit	301032	8.3 lbs/ton of sulfur feed	Average of 3 test runs, sulfur is free carbon disulfide plant	194
Hydrogen sulfide	7783064	3296	Mineral wool manufacturing	Mineral wool cupola	30501701	3.0 lbs/ton of mineral wool produced	Uncontrolled emissions, average of 3 tests	187
Indene	95136		Scrap tire, open burning	Tires in experimental burn hut		0.7878 lb/ton tire	EAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.3 kg/hr, uncontrolled	212
Indene	95136		Scrap tire, open burning	Tires in experimental burn hut		0.579 lb/ton tire	EAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr, uncontrolled	212
Indene	95136		Scrap tire, open burning	Tires in experimental burn hut		1.44 lb/ton tire	EAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.7 kg/hr, uncontrolled	212

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Indene	95136		Scrap tire, open burning	Tires in experimental burn hut		0.577 lb/ton tire	XAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 2.3 kg/hr, uncontrolled	212
Indeno(1,2,3-cd)pyrene	193395		Scrap tire, open burning	Tires in experimental burn hut		0.193 lb/ton tire	Sum of PAH analy on liq extrct. of XAD-2 test & filter compnt, shred condition = 2" by 2" piece, burn rate=1.3 kg/hr, controlled	212
Indeno(1,2,3-cd)pyrene	193395		Scrap tire, open burning	Tires in experimental burn hut		0.148 lb/ton tire	Sum of PAH analy on liq extrct. of XAD-2 test & filter compnt, shred condition = 2" by 2" piece, burn rate=1.1 kg/hr, controlled	212
Indeno(1,2,3-cd)pyrene	193395		Scrap tire, open burning	Tires in experimental burn hut		0.135 lb/ton tire	Sum of PAH analy on liq extrct. of XAD-2 test & filter compnt, shred condition = 2" by 2" piece, burn rate=1.7 kg/hr, controlled	212
Indeno(1,2,3-cd)pyrene	193395		Scrap tire, open burning	Tires in experimental burn hut		0.070 lb/ton tire	Sum of PAH analy on liq extrct. of XAD-2 test & filter compnt, shred condition = 2" by 2" piece, burn rate=2.3 kg/hr, controlled	212
Iron	15438310	25	Wood combustion, industrial	Horizontal return tube	10200906	194.7 lb/10E12 Btu heat input	Sample results, 1 plant, wood flowrate = .514 kg/s, boiler has 3-pass design w/flyash reinjection, uncontrolled	176
Iron	15438310	25	Wood combustion, industrial	Balanced draft wicket stoker-fired industrial boiler	10200906	0.0084 lb/ton fuel or >0.24 ng/J	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 kg/s, boil. eff. 58.3%	177
Iron	15438310	25	Wood combustion, industrial	Balanced draft wicket stoker-fired industrial boiler	10200906	0.0104 lb/ton fuel or >0.39 ng/J	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.84 kg/s, boil. eff. 61.3%	177
Iron	15438310	2951	Asphaltic concrete production	Plant stack	305002	3.72 x 10E-7 lb/ton concrete	Uncontrolled from a single plant, avg. of 2 values, range is 2.22 x 10E-7 - 5.21 x 10E-7 lb/ton	170
Iron	15438310	2951	Asphaltic concrete production	Plant stack	305002	4.73 x 10E-9 lb/ton concrete	Controlled (unspecified) from a single plant, avg. of 2 values, range is 3.08 x 10E-9 - 6.38 x 10E-9 lb/ton	170
Iron	15438310	806	Hospital waste incineration	Incinerator	315020	<0.0103 lb/ton feed	Uncontrolled, average emission factor based on 3 facilities	147
Isobutyraldehyde	78842		Wood combustion, residential	Fireplace		2.8 lb/ton wood burned	Uncontrolled, average emission factor based on source tests	58
Isobutyraldehyde	78842		Wood combustion, residential	Woodstove		3 lb/ton wood burned	Uncontrolled, average emission factor based on source tests	58
Lead	7439921		Coal combustion, industrial	Pulverized coal watertube boiler	10200202	0.0086 lbs/10E6 BTU heat input	Uncontrolled emissions	189
Lead	7439921		Coal combustion, industrial	Spreader stoker watertube boiler	10200204	0.0086 lbs/10E6 BTU heat input	Uncontrolled emissions	189

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Lead	7439921		Coal combustion, industrial	Chaingrate stoker watertube boiler	102002	0.0086 lbs/10E6 BTU heat input	Uncontrolled emissions	189
Lead	7439921		Coal combustion, industrial	Underfeed stoker watertube boiler	10200204	0.0086 lbs/10E6 BTU heat input	Uncontrolled emissions	189
Lead	7439921		Oil combustion	Industrial, commercial, and residential boilers	1	8.9 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement, assumed use distillate oil	34
Lead	7439921		Oil combustion	Utility boiler	101004	28 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement, assumed use residual oil	34
Lead	7439921		Oil combustion, industrial	Oil-fired boiler	102005	0.00015 lbs/10E6 BTU heat input	Uncontrolled emissions, based on 1 test	189
Lead	7439921		Paved roads	Dust reentrainment		6.61 x 10E-5 lb/vehicle mile	Calculated based on data available for 1975-1976	122
Lead	7439921		Paved roads	Entire source		1.432 x 10E-4 lb/vehicle mile	Based on field measurements for 1975-1976	122
Lead	7439921		Paved roads	Vehicle exhaust		4.41 x 10E-6 lb/vehicle mile	Projected emission factor for 1990, calculated based on composite vehicle operation	122
Lead	7439921		Sewage sludge incineration	Fluidized-bed furnace	501	0.0002 - 0.008 lbs/ton dry sludge	Controlled by wet scrubber	203
Lead	7439921		Sewage sludge incineration	Fluidized-bed furnace	501	0.052 lbs/ton dry sludge	Uncontrolled emissions, single test	203
Lead	7439921		Sewage sludge incineration	Multiple hearth furnace	501	0.026 - 1.77 lbs/ton dry sludge	Uncontrolled emissions, average of 5 tests was 0.53 lbs/ton	203
Lead	7439921	25	Wood combustion, industrial	Horizontal return tube	10200906	62.61 lb/10E12 Btu heat input	Sample results, 1 plant, wood flowrate = .814 kg/s, boiler has 3-pass design w/flyash reinjection, uncontrolled	176
Lead	7439921	25	Wood combustion, industrial	Balanced draft wiches stoker-fired industrial boiler	10200906	0.00022 lb/ton fuel or 0.007 ng/J	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 kg/s, boil. eff. 85.3%	177
Lead	7439921	25	Wood combustion, industrial	Balanced draft wiches stoker-fired industrial boiler	10200906	0.00040 lb/ton fuel or 0.015 ng/J	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.54 kg/s, boil. eff. 61.3%	177
Lead	7439921	2951	Asphaltic concrete production	Plant stack	305002	3.98 x 10E-11 lb/ton	Controlled (unspecified) from a single plant, avg. of 2 values, range is 3.7 x 10E-11 - 4.25 x 10E-11 lb/ton	170
Lead	7439921	2951	Asphaltic concrete production	Plant stack	305002	9.9 x 10E-10 lb/ton concrete	Uncontrolled from a single plant, average of 2 values, range is 8.8 x 10E-10 - 1.1 x 10E-9 lb/ton	170

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Lead	7439921	3312	Steel production	Argon oxygen decarburization vessel (stainless steel)	303009	0.039 lbs/ton steel	Uncontrolled emissions	198
Lead	7439921	3312	Steel production	Electric arc furnace/AOD vessel streams combined	303009	0.13 lbs/ton steel	Uncontrolled emissions	198
Lead	7439921	3313	Ferroalloy production	Electric arc furnace, sealed, silicomanganese	30300702	6.06 lb/mw-hr energy consumed by furnace	Controlled, venturi scrubber	169
Lead	7439921	3341	Secondary lead smelting	Blast furnace	30400403	1.48 lbs/ton lead	Controlled by an afterburner and baghouse, range is 0.022 - 4.875 lbs/ton	199
Lead	7439921	3341	Secondary lead smelting	Reverberatory furnace	30400402	0.033 lbs/ton lead	Controlled by a baghouse, range of 6 tests is 0.026 - 0.054 lbs/ton	199
Lead	7439921	3341	Secondary lead smelting	Blast furnace	30400403	0.085 lbs/ton lead	Controlled by venturi scrubber, range is 0.056 - 0.110 lbs/ton	199
Lead	7439921	3341	Secondary lead smelting	Blast and reverberatory furnaces	30400403	0.0094 lbs/ton lead	Controlled by an afterburner, baghouses, and venturi scrubber, range is 0.0067 - 0.0145 lbs/ton	199
Lead	7439921	3356	Solder manufacture	Entire process	304005	0.1 -0.6 lb/ton lead throughput	Based on one source test and engineering estimates from three other facilities.	204
Lead	7439921	369	Battery (lead-acid) manufacture	Lead oxide production	30400508	0.0026 - 0.014 lb/ton lead processed	Controlled with a baghouse, lead acid batteries	204
Lead	7439921	369	Battery (lead-acid) manufacture	Melting process	304005	0.139 lb/ton lead processed	Uncontrolled, based on an engineering estimate, lead acid batteries	204
Lead	7439921	369	Battery (lead-acid) manufacture	Paste mixing process	30400523	1.72 lb/ton of lead throughput	Uncontrolled, lead acid batteries	204
Lead	7439921	3691	Battery manufacture	Lead oxide mill - barton process	30400524	0.45 lbs/ton of throughput	Controlled by a baghouse, lead oxide plant not batteries, lead acid batteries, range is 0.33 - 0.74 lb/ton	193
Lead	7439921	3691	Battery manufacture	Lead oxide ball mill	30400508	0.0027 lbs/ton of throughput	Controlled by a baghouse, lead acid batteries, range is 0.0021 - 0.0029 lb/ton	193
Lead	7439921	3691	Battery manufacture	Lead reclamation	30400510	0.101 lbs/ton of lead feed	Controlled by cascade scrubber at average efficiency of 98.3%, lead acid batteries, range is 0.064 - 0.142 lb/ton	193
Lead	7439921	3691	Battery manufacture	Slitting machine and mixer changing	30400509	0.459 lbs/1000 batteries produced	Controlled by baghouse at average efficiency of 97.5%, lead acid batteries, range is 0.424 - 0.496 lb/1000	193
Lead	7439921	3691	Battery manufacture	Slitting machine and full mixing cycle	30400509	0.432 lbs/1000 batteries produced	Controlled by baghouse at average efficiency of 98.1%, lead acid batteries	193

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Lead	7439921	3691	Battery manufacture	Slitting machine	30400509	0.24 lbs/1000 batteries produced	Controlled by baghouse at average efficiency of 98.5%, lead acid batteries	193
Lead	7439921	3691	Battery manufacture	Grid casting and mixing	30400506	0.061 lbs/1000 batteries produced	Roto-clone controlled at average efficiency of 89.7%, lead acid batteries, range is 0.038 - 0.084 lb/1000 batteries	193
Lead	7439921	3691	Battery manufacture	Grid casting and full mixing cycle	30400506	0.061 lbs/1000 batteries produced	Roto-clone controlled at average efficiency of 94.2%, lead acid batteries, range is 0.052 - 0.068 lb/1000 batteries	193
Lead	7439921	3691	Battery manufacture	Grid casting	30400506	0.08 lbs/1000 batteries produced	Roto-clone controlled at average efficiency of 94.1%, lead acid batteries	193
Lead	7439921	3691	Battery manufacture	Three process formation operation	30400504	0.313 lbs/1000 batteries produced	Controlled by baghouse with average efficiency of 90.9%, lead acid batteries, range is 0.284 - 0.372 lbs/1000 batteries	193
Lead	7439921	3691	Battery manufacture	Lead oxide mill	30400508	0.009 lbs/ton of lead input	Controlled by baghouse, lead acid batteries, range is 0.007 - 0.014 lbs/ton of lead	193
Lead	7439921	3691	Battery manufacture	Three process formation operation	30400504	0.052 lbs/1000 batteries produced	Controlled by baghouse with average efficiency of 99.3%, lead acid batteries, range is 0.012 - 0.124 lbs/1000 batteries	193
Lead	7439921	3691	Battery manufacture	Three process formation operation	30400504	1.13 lbs/ton of lead throughput	Uncontrolled factor, lead acid batteries	193
Lead	7439921	3691	Battery manufacture	Paste mixing	30400507	1.72 lbs/ton of lead throughput	Uncontrolled factor, lead acid batteries	193
Lead	7439921	3691	Battery manufacture	Lead reclamation	30400526	5.9 lbs/ton of lead throughput	Uncontrolled factor, lead acid batteries	193
Lead	7439921	3691	Battery manufacture	Grid casting	30400522	0.139 lbs/ton of lead throughput	Uncontrolled factor, lead acid batteries	193
Lead	7439921	3691	Battery manufacture	Lead oxide production	304005	0.02 lbs/ton of lead throughput	Uncontrolled factor, lead acid batteries	193
Lead	7439921	4911	Coal combustion	Industrial and commercial boilers	102002	507.4 lb/10E12 Btu	Uncontrolled, assumed use bituminous coal, calculated based on engineering judgement	34
Lead	7439921	4911	Coal combustion	Industrial and commercial boilers	102002	223.3 lb/10E12 Btu	Controlled, assumed use bituminous coal, calculated based on engineering judgement	34
Lead	7439921	4911	Coal combustion	Utility boiler	101002	507.4 lb/10E12 Btu	Uncontrolled, assumed use bituminous coal, calculated based on engineering judgement	34
Lead	7439921	4911	Coal combustion	Utility boiler	101002	25.37 lb/10E12 Btu	Controlled, assumed use bituminous coal, calculated based on engineering judgement	34

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Lead	7439921	4911	Coal combustion, residential	Residential boilers		510.0 lb/10E12 Btu	Uncontrolled, assumed use anthracite coal, calculated based on engineering judgement	34
Lead	7439921	806	Hospital waste incineration	Incinerator	315020	<0.0371 lb/ton feed	Uncontrolled, average emission factor based on 3 facilities	147
Lead oxide	1317368	3312	Steel production	Electric arc furnace - charge and tap cycle	30300908	0 - 0.08 lbs/ton carbon steel	Uncontrolled emissions	198
Lead oxide	1317368	3312	Steel production	AOD vessel - melt and refine cycle	303009	0.192 lbs/ton specialty steel	Uncontrolled emissions	198
Lead oxide	1317368	3312	Steel production	Electric arc furnace - melting/refining	30300908	0 - 1.6 lbs/ton carbon steel	Uncontrolled emissions	198
Lead oxide	1317368	332	Iron foundries	Electric arc furnace - charge and tap cycle	30400304	0.7-2.8 lbs/ton of iron produced	Uncontrolled emissions	184
Lead oxide	1317368	332	Iron foundries	Electric arc furnace - melting/refining	30400304	7.0-28 lbs/ton of iron produced	Uncontrolled emissions	184
Limonene	138863		Scrap tire, open burning	Tires in experimental burn hut		4.129 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.3 kg/hr, uncontrolled	212
Limonene	138863		Scrap tire, open burning	Tires in experimental burn hut		5.198 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr, uncontrolled	212
Limonene	138863		Scrap tire, open burning	Tires in experimental burn hut		0.226 lb/ton tire	XAD-2 extracts w/MS analysis, chunk condition = 1/4-1/6 of tire, burn rate = 1.7 kg/hr, uncontrolled	212
Limonene	138863		Scrap tire, open burning	Tires in experimental burn hut		1.716 lb/ton tire	VOST samples burn rate = 1.5 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Limonene	138863		Scrap tire, open burning	Tires in experimental burn hut		0.768 lb/ton tire	VOST samples burn rate = 2.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Limonene	138863		Scrap tire, open burning	Tires in experimental burn hut		1.87 lb/ton tire	VOST samples burn rate = 0.9 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Limonene	138863		Scrap tire, open burning	Tires in experimental burn hut		1.190 lb/ton tire	VOST samples burn rate = 1.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Limonene	138863		Scrap tire, open burning	Tires in experimental burn hut		1.462 lb/ton tire	VOST samples burn rate = 1.4 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Limonene	138863		Scrap tire, open burning	Tires in experimental burn hut		3.872 lb/ton tire	VOST samples burn rate = 0.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Limonene	138863		Scrap tire, open burning	Tires in experimental burn hut		0.232 lb/ton tire	VOST samples burn rate = 0.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Limonene	138863		Scrap tire, open burning	Tires in experimental burn hut		0.057 lb/ton tire	VOST samples burn rate = 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Limonene	138863		Scrap tire, open burning	Tires in experimental burn hut		0.033 lb/ton tire	VOST samples burn rate = 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Magnesium	7439954	2951	Asphaltic concrete production	Plant stack	305002	8.8 x 10E-9 lb/ton concrete	Controlled (unspecified) from a single plant, mean of 2 values, range is 4.4 x 10E-9 - 1.32 x 10E-8 lb ton	170
Magnesium	7439954	2951	Asphaltic concrete production	Plant stack	305002	2.94 x 10E-7 lb/ton concrete	Uncontrolled from a single plant, mean of 2 values, range is 2.05 x 10E-7 - 3.87 x 10E-7 lb/ton	170
Maleic anhydride	108316	2865	Phthalic anhydride production - naphthalene process	Main process incinerator	301019	14 lb/ton PA produced	Uncontrolled, test data and engineering judgement	120
Maleic anhydride	108316	2865	Phthalic anhydride production - naphthalene process	Main process incinerator	301019	0.58 lb/ton PA produced	Controlled, test data and engineering judgement	120
Maleic anhydride	108316	2865	Phthalic anhydride production - naphthalene process	Secondary incinerator	301019	9.8 lb/ton PA produced	Uncontrolled, test data and engineering judgement	120
Maleic anhydride	108316	2865	Phthalic anhydride production - naphthalene process	Secondary incinerator	301019	0.1 lb/ton PA produced	Controlled (not specified), test data and engineering judgement	120
Maleic anhydride	108316	2865	Phthalic anhydride production - xylene process	Main process incinerator	301019	3.44 lb/ton PA produced	Controlled, based on test data	120
Maleic anhydride	108316	2865	Phthalic anhydride production - xylene process	Main process incinerator	301019	104 lb/ton PA produced	Uncontrolled, based on test data and engineering judgement	120
Maleic anhydride	108316	2865	Phthalic anhydride production - xylene process	Secondary incinerator	301019	0.076 lb/ton PA produced	Controlled, test data and engineering judgement	120
Maleic anhydride	108316	2865	Phthalic anhydride production - xylene process	Secondary incinerator	301019	7.5 lb/ton PA produced	Uncontrolled, based on test data and engineering judgement	120
Manganese	7439965		Coal combustion	Anthracite coal-fired cyclone boilers, util/cogenerc/industr	1	710-1340 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Manganese	7439965		Coal combustion	Anthracite coal-fired cyclone boilers, util/cogenerc/industr	1	332-625 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Manganese	7439965		Coal combustion	Anthracite coal-fired cyclone boilers, util/commerc/industr	1	155 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Manganese	7439965		Coal combustion	Anthracite coal-fired cyclone boilers, util/commerc/industr	1	72-135 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Manganese	7439965		Coal combustion	Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	3070 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Manganese	7439965		Coal combustion	Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	1430 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Manganese	7439965		Coal combustion	Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	461 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Manganese	7439965		Coal combustion	Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	37 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Manganese	7439965		Coal combustion	Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	832-3070 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Manganese	7439965		Coal combustion	Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	388-1430 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Manganese	7439965		Coal combustion	Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	182 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Manganese	7439965		Coal combustion	Anthracite coal-fired stoker boilers, util/commerc/industr	1	2230 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Manganese	7439965		Coal combustion	Anthracite coal-fired stoker boilers, util/commerc/industr	1	202-1040 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Manganese	7439965		Coal combustion	Anthracite coal-fired stoker boilers, util/commerc/industr	1	32-489 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Manganese	7439965		Coal combustion	Bituminous coal-fired cyclone boiler, util/commerc/industr	1	690-1300 lb/10E12 Btu	Uncontrolled, based on measured and calculated emission factors	36

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Manganese	7439965		Coal combustion	Bituminous coal-fired cyclone boiler, util/commerc/industr	1	322-607 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Manganese	7439965		Coal combustion	Bituminous coal-fired cyclone boiler, util/commerc/industr	1	151 lb/10E12 Btu	Controlled with ESP, based on source tests	36
Manganese	7439965		Coal combustion	Bituminous coal-fired cyclone boiler, util/commerc/industr	1	70-131 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Manganese	7439965		Coal combustion	Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	2980 lb/10E12 Btu	Uncontrolled, based on source tests	36
Manganese	7439965		Coal combustion	Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	1390 lb/10E12 Btu	Controlled with multiclone, based on controlled and uncontrolled emission test data	36
Manganese	7439965		Coal combustion	Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	442 lb/10E12 Btu	Controlled with ESP, based on source tests	36
Manganese	7439965		Coal combustion	Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	36 lb/10E12 Btu	Controlled with scrubber, based on source tests	36
Manganese	7439965		Coal combustion	Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	808-2980 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Manganese	7439965		Coal combustion	Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	377-1390 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Manganese	7439965		Coal combustion	Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	177 lb/10E12 Btu	Controlled with ESP, based on source tests	36
Manganese	7439965		Coal combustion	Bituminous coal-fired spreader stoker boilers, util/commerc/industr	1	2170 lb/10E12 Btu	Uncontrolled, based on source tests	36
Manganese	7439965		Coal combustion	Bituminous coal-fired spreader stoker boilers, util/commerc/industr	1	196-1010 lb/10E12 Btu	Controlled with multiclone, based on measured and calculated emission factors	36
Manganese	7439965		Coal combustion	Bituminous coal-fired spreader stoker boilers, util/commerc/industr	1	31-475 lb/10E12 Btu	Controlled with ESP, based on measured and calculated emission factors	36

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Manganese	7439965		Coal combustion	Lignite coal-fired cyclone boilers, util/commerc/industr	1	3760-7090 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Manganese	7439965		Coal combustion	Lignite coal-fired cyclone boilers, util/commerc/industr	1	1760-3310 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Manganese	7439965		Coal combustion	Lignite coal-fired cyclone boilers, util/commerc/industr	1	823 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Manganese	7439965		Coal combustion	Lignite coal-fired cyclone boilers, util/commerc/industr	1	382-714 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	34
Manganese	7439965		Coal combustion	Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	16,200 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Manganese	7439965		Coal combustion	Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	7580 lb/10E12 Btu	Controlled by multiclone, calculated based on engineering judgement	34
Manganese	7439965		Coal combustion	Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	3500 lb/10E12 Btu	Controlled by ESP, calculated based on engineering judgement	34
Manganese	7439965		Coal combustion	Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	196 lb/10E12 Btu	Controlled by scrubber, calculated based on engineering judgement	34
Manganese	7439965		Coal combustion	Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	4,410-16,290 lb/10E12 Btu	Uncontrolled	34
Manganese	7439965		Coal combustion	Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	2080-7580 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Manganese	7439965		Coal combustion	Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	965 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Manganese	7439965		Coal combustion	Lignite coal-fired spreader stoker boilers, util/commerc/industr	1	11,800 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Manganese	7439965		Coal combustion	Lignite coal-fired spreader stoker boilers, util/commerc/industr	1	1070-5510 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Manganese	7439965		Coal combustion	Lignite coal-fired spreader stoker boilers, util/commerc/industr	1	169-2590 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Manganese	7439965		Coal combustion, residential	Anthracite coal-fired boilers		790 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Manganese	7439965		Coal combustion, residential	Bituminous coal-fired boilers		760 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Manganese	7439965		Coal combustion, residential	Boilers fired by coal from appalachian region		860 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Manganese	7439965		Coal combustion, residential	Boilers fired by coal from interior region		910 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Manganese	7439965		Coal combustion, residential	Boilers fired by coal from northern plains region		1100 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Manganese	7439965		Coal combustion, residential	Boilers fired by coal from rocky mountain region		2200 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Manganese	7439965		Coal combustion, residential	Lignite coal-fired boilers		4200 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Manganese	7439965		Coal combustion, residential	Subbituminous coal-fired boilers		1000 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Manganese	7439965		Oil combustion	Distillate oil-fired boiler, util/commerc/industr/residential	1	14 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Manganese	7439965		Oil combustion	Distillate oil-fired boiler, util/commerc/industr/residential	1	6.44 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Manganese	7439965		Oil combustion	Distillate oil-fired boiler, util/commerc/industr/residential	1	3.08 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Manganese	7439965		Oil combustion	Distillate oil-fired boiler, util/cogenerc/industr/residential	1	1.54 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	34
Manganese	7439965		Oil combustion	Residual oil-fired boiler, util/cogenerc/industr/residential	1	26 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Manganese	7439965		Oil combustion	Residual oil-fired boiler, util/cogenerc/industr/residential	1	11.96 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Manganese	7439965		Oil combustion	Residual oil-fired boiler, util/cogenerc/industr/residential	1	5.72 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Manganese	7439965		Oil combustion	Residual oil-fired boiler, util/cogenerc/industr/residential	1	2.84 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	34
Manganese	7439965		Wood combustion	Commercial	103009	1.0 lb/ton wood burned	Control status unspecified, based on emission factor for residential woodstoves	94
Manganese	7439965		Wood combustion	Industrial	102009	1.0 lb/ton wood burned	Control status unspecified, based on emission factor for residential woodstoves	94
Manganese	7439965		Wood combustion, residential	Fireplace		1.0 lb/ton wood burned	Control status and basis unspecified	94
Manganese	7439965		Wood combustion, residential	Woodstove		1.0 lb/ton wood burned	Control status and basis unspecified	94
Manganese	7439965		Wood combustion, residential	Woodstove or fireplace		1.0 lb/ton burned	Uncontrolled	94
Manganese	7439965		Wood combustion, residential	Woodstove without baffle		3.8 x 10E-4 lb/ton wood burned	Uncontrolled, based on one study, nonbaffled stove burning green pine	98
Manganese	7439965	1061	Manganese mining	General emissions	305	Negligible	High grade ore no longer mined in U.S.	13
Manganese	7439965	226	Woven fabric finishing	Curing oven - resin finish	330001	1.48 x 10E-4 lb/ton fabric	Uncontrolled, average of three tests	92
Manganese	7439965	226	Woven fabric finishing	Heat setting	330001	2.2 x 10E-5 lb/ton fabric	Uncontrolled, based on test data	92
Manganese	7439965	226	Woven fabric finishing	Tenter frames - resin finishing	330001	1.44 x 10E-4 lb/ton fabric	Uncontrolled, average of four tests	92

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Manganese	7439965	226	Woven fabric finishing	Thermosol dyeing	330001	5.8 x 10E-6 lb/ton fabric	Uncontrolled, average of three tests	52
Manganese	7439965	2819	Chemical applications	Entire process	301	8 lb/ton used	Based on engineering estimates	13
Manganese	7439965	2819	Manganese chemical production	Ore drying/grinding	301070	6.9 lb/ton of material processed	Uncontrolled, calculated based on engineering judgement	107
Manganese	7439965	2819	Manganese chemical production	Ore drying/grinding	301070	0.009 lb/ton of material processed	Controlled by fabric filter, calculated based on engineering judgement	107
Manganese	7439965	2819	Manganese chemical production	Ore roasting	301070	110 lb/ton of material processed	Uncontrolled, calculated based on engineering judgement	107
Manganese	7439965	2819	Manganese chemical production	Ore roasting	301070	0.22 lb/ton of material processed	Controlled by fabric filter, calculated based on engineering judgement	107
Manganese	7439965	2819	Manganese dioxide (synthetic) production	Dryer/grinder	301070	6.9 lb/ton of material processed	Uncontrolled, calculated based on engineering judgement	107
Manganese	7439965	2819	Manganese dioxide (synthetic) production	Dryer/grinder	301070	0.009 lb/ton of material processed	Controlled by fabric filter, calculated based on engineering judgement	107
Manganese	7439965	2819	Manganese dioxide (synthetic) production	Packaging and handling	301070	5.4 lb/ton of material processed	Uncontrolled, calculated based on engineering judgement	107
Manganese	7439965	2819	Manganese dioxide (synthetic) production	Packaging and handling	301070	0.0054 lb/ton of material processed	Controlled by fabric filter, calculated based on engineering judgement	107
Manganese	7439965	2819	Manganese dioxide (synthetic) production	Roasting	301070	110 lb/ton of material processed	Uncontrolled, calculated based on engineering judgement	107
Manganese	7439965	2819	Manganese dioxide (synthetic) production	Roasting	301070	0.22 lb/ton of material processed	Controlled by fabric filter, calculated based on engineering judgement	107
Manganese	7439965	2951	Asphaltic concrete production	Plant stack	305002	3.02 x 10E-10 lb/ton concrete	Controlled (unspecified) from a single plant, average of 2 values, range is 1.62 x 10E-10 - 4.4 x 10E-10 lb/ton	170
Manganese	7439965	2951	Asphaltic concrete production	Plant stack	305002	5.72 x 10E-9 lb/ton concrete	Uncontrolled from a single plant, average of 2 values, range is 3.3 x 10E-9 - 8.1 x 10E-9 lb/ton	170
Manganese	7439965	3241	Cement manufacture	Clinker cooler	305	9 x 10E-4 - 6.1 x 10E-5 lb/ton cement	Controlled by fabric filter, calculated based on engineering judgement	107
Manganese	7439965	3241	Cement manufacture	Clinker cooler	305	2.3 x 10E-5 - 4.5 x 10E-5 lb/ton cement	Controlled by gravel bed, calculated based on engineering judgement	107
Manganese	7439965	3241	Cement manufacture	Clinker cooler	305	2.2 x 10E-5 lb/ton cement produced	Controlled by wet scrubber, calculated based on engineering judgement	107
Manganese	7439965	3241	Cement manufacture - dry process	Dryer/grinder	30500613	0.048 lb/ton cement produced	Uncontrolled, calculated based on engineering judgement	107

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Manganese	7439965	3241	Cement manufacture - dry process	Kiln	30500606	0.122 lb/ton cement produced	Uncontrolled, calculated based on engineering judgement	107
Manganese	7439965	3241	Cement manufacture - dry process	Kiln	30500606	2.1 x 10E-5 - 1.25 x 10E-4 lb/ton cement	Controlled by ESP, calculated based on engineering judgement	107
Manganese	7439965	3241	Cement manufacture - dry process	Kiln	30500606	1.3 x 10E-5 - 1.24 x 10E-4 lb/ton cement	Controlled by fabric filter, calculated based on engineering judgement	107
Manganese	7439965	3241	Cement manufacture - wet process	Dryer/grinder	305007	0.016 lb/ton cement produced	Uncontrolled, calculated based on engineering judgement	107
Manganese	7439965	3241	Cement manufacture - wet process	Kiln	30500706	0.114 lb/ton cement produced	Uncontrolled, calculated based on engineering judgement	107
Manganese	7439965	3241	Cement manufacture - wet process	Kiln	30500706	2 x 10E-5 - 1.42 x 10E-4 lb/ton cement	Controlled by ESP, calculated based on engineering judgement	107
Manganese	7439965	3241	Cement manufacture - wet process	Kiln	30500706	4.9 x 10E-5 - 1.32 x 10E-4 lb/ton cement	Controlled by fabric filter, calculated based on engineering judgement	107
Manganese	7439965	3312	Coke production	Coke oven battery	303003	0.026 lb/ton coal burned	Based on engineering estimates	13
Manganese	7439965	3312	Iron and steel production	General emissions	303	0.04 lb/ton iron and steel produced	Based on engineering estimates	13
Manganese	7439965	3312	Iron and steel production	Iron blast furnaces, casthouse emissions	30300825	0.0018 lb/ton of iron	Uncontrolled, calculated based on engineering judgement	107
Manganese	7439965	3312	Iron and steel production	Iron blast furnaces, casthouse emissions	30300825	0.00018 lb/ton of iron	Controlled by runner covers & pitch hoods to fabric filter, calculated based on engineering judge.	107
Manganese	7439965	3312	Iron and steel production	Iron blast furnaces, slips	30300826	0.261 lb/slip	Uncontrolled, calculated based on engineering judgement	107
Manganese	7439965	3312	Iron and steel production	Open hearth furnace operations, melting/refining	30300901	0.078 lb/ton of pig iron	Uncontrolled, calculated based on engineering judgement	107
Manganese	7439965	3312	Iron and steel production	Open hearth furnace operations, melting/refining	30300901	0.001 lb/ton of pig iron	Controlled by ESP, calculated based on engineering judgement	107
Manganese	7439965	3312	Iron and steel production	Open hearth furnace operations, roof monitor	303009	0.0006 lb/ton of pig iron	Uncontrolled, calculated based on engineering judgement	107
Manganese	7439965	3312	Iron and steel production	Open hearth furnace operations, teeming	303009	0.00026 lb/ton of pig iron	Uncontrolled, calculated based on engineering judgement	107
Manganese	7439965	3312	Iron and steel production	Open hearth furnace operations, teeming	303009	4 x 10E-6 lb/ton of pig iron	Controlled by side-draft hood to fabric filter, calculated based on engineering judgement	107

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Manganese	7439965	3312	Iron and steel production	Sintering operations, sinter discharge (breaker and hot screen)	303008	0.08 lb/ton of sinter	Uncontrolled, calculated based on engineering judgement	107
Manganese	7439965	3312	Iron and steel production	Sintering operations, sinter discharge (breaker and hot screen)	303008	0.0012 lb/ton of sinter	Controlled by fabric filter, calculated based on engineering judgement	107
Manganese	7439965	3312	Iron and steel production	Sintering operations, sinter discharge (breaker and hot screen)	303008	0.007 lb/ton of sinter	Controlled by orifice scrubber, calculated based on engineering judgement	107
Manganese	7439965	3312	Iron and steel production	Sintering operations, windbox and discharge	303008	0.0036 lb/ton of sinter	Controlled by fabric filter, calculated based on engineering judgement	107
Manganese	7439965	3312	Iron and steel production	Sintering operations, windbox exhaust	30300813	0.134 lb/ton of sinter	Uncontrolled, calculated based on engineering judgement	107
Manganese	7439965	3312	Iron and steel production	Sintering operations, windbox exhaust	30300813	0.104 lb/ton of sinter	After coarse particle removal, calculated based on engineering judgement	107
Manganese	7439965	3312	Iron and steel production	Sintering operations, windbox exhaust	30300813	0.0192 lb/ton of sinter	Controlled by dry ESP, calculated based on engineering judgement	107
Manganese	7439965	3312	Iron and steel production	Sintering operations, windbox exhaust	30300813	0.002 lb/ton of sinter	Controlled by wet ESP, calculated based on engineering judgement	107
Manganese	7439965	3312	Iron and steel production	Sintering operations, windbox exhaust	30300813	0.0056 lb/ton of sinter	Controlled by scrubber, calculated based on engineering judgement	107
Manganese	7439965	3312	Iron and steel production	Sintering operations, windbox exhaust	30300813	0.012 lb/ton of sinter	Controlled by cyclone, calculated based on engineering judgement	107
Manganese	7439965	3312	Steel production	Basic oxygen furnace operations, BOF monitor	303009	0.005 lb/ton of steel	All sources, uncontrolled, calculated based on engineering judgement	107
Manganese	7439965	3312	Steel production	Basic oxygen furnace operations, Q-BOP process melting/refining	303009	0.00056 lb/ton of steel	Controlled by scrubber, calculated based on engineering judgement	107
Manganese	7439965	3312	Steel production	Basic oxygen furnace operations, charging	30300916	0.006 lb/ton of steel	At source, uncontrolled, calculated based on engineering judgement	107
Manganese	7439965	3312	Steel production	Basic oxygen furnace operations, hot metal transfer	30300915	0.0004 lb/ton of steel	At source, uncontrolled, calculated based on engineering judgement	107
Manganese	7439965	3312	Steel production	Basic oxygen furnace operations, tapping	30300917	0.0092 lb/ton of steel	At source, uncontrolled, calculated based on engineering judgement	107
Manganese	7439965	3312	Steel production	Electric arc furnace operations, charging/tapping/slagging	303009	0.049 lb/ton of product	Uncontrolled at roof monitor, calculated based on engineering judgement	107

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Manganese	7439965	3312	Steel production	Electric arc furnace operations, melt/ref/charge/tap/slag alloy steel	303009	0.656 lb/ton of product	Uncontrolled, calculated based on engineering judgement	107
Manganese	7439965	3312	Steel production	Electric arc furnace operations, melt/ref/charge/tap/slag alloy steel	303009	0.0174 lb/ton of product	Controlled by total building evacuation to fabric filter, calculated based on engineering judgement	107
Manganese	7439965	3312	Steel production	Electric arc furnace operations, melt/ref/charge/tap/slag carbon steel	303009	1.75 lb/ton of product	Uncontrolled, calculated based on engineering judgement	107
Manganese	7439965	3312	Steel production	Electric arc furnace operations, melt/ref/charge/tap/slag carbon steel	303009	0.0015 lb/ton of product	Controlled by DEC plus charging hood to fabric filter, calculated based on engineering judgement	107
Manganese	7439965	3312	Steel production	Electric arc furnace operations, melting/refining carbon steel	30300908	1.33 lb/ton of product	Uncontrolled, calculated based on engineering judgement	107
Manganese	7439965	3312	Steel production	Top-blown basic oxygen furnace, melting/refining	30300913	0.285 lb/ton of steel	Uncontrolled, calculated based on engineering judgement	107
Manganese	7439965	3312	Steel production	Top-blown basic oxygen furnace, melting/refining	30300913	0.013 lb/ton of steel	Controlled by open hood vented to ESP, calculated based on engineering judgement	107
Manganese	7439965	3312	Steel production	Top-blown basic oxygen furnace, melting/refining	30300913	0.009 lb/ton of steel	Controlled by open hood vented to scrubber, calculated based on engineering judgement	107
Manganese	7439965	3312	Steel production	Top-blown basic oxygen furnace, melting/refining	30300914	0.00048 lb/ton of steel	Controlled by closed hood vented to scrubber, calculated based on engineering judgement	107
Manganese	7439965	3313	Ferroalloy production	General emissions	303006	6.614 lb/ton ferroalloy produced	Based on engineering estimates	13
Manganese	7439965	3313	Ferromanganese production by electric arc furnace process	Casting	303	0.48 lb/ton of Mn product	Control status unspecified, calculated based on engineering judgement	107
Manganese	7439965	3313	Ferromanganese production by electric arc furnace process	Crushing/grinding/sizing	303	0.16 lb/ton of Mn product	Control status unspecified, calculated based on engineering judgement	107
Manganese	7439965	3313	Ferromanganese production by electric arc furnace process	Ladle treatment	303	7.8 lb/ton of Mn product	Control status unspecified, calculated based on engineering judgement	107

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Manganese	7439965	3313	Ferromanganese production by electric arc furnace process	Open submerged-arc electric furnace	303006	13.2 lb/ton of product	Uncontrolled, based on AP-42 data for ferroalloy production	107
Manganese	7439965	3313	Ferromanganese production by electric arc furnace process	Open submerged-arc electric furnace	303006	6.16 lb/MWh consumed by furn. operation	Uncontrolled, based on AP-42 data for ferroalloy production	107
Manganese	7439965	3313	Ferromanganese production by electric arc furnace process	Open submerged-arc electric furnace	303006	0.4 lb/ton of product	Controlled by scrubbers, calculated from source tests of total particulate emissions	107
Manganese	7439965	3313	Ferromanganese production by electric arc furnace process	Open submerged-arc electric furnace	303006	0.189 lb/MWh consumed by furn. operation	Controlled by scrubbers, calculated from source tests of total particulate emissions	107
Manganese	7439965	3313	Ferromanganese production by electric arc furnace process	Sealed submerged-arc electric furnace	303	19.2 lb/ton of product	Uncontrolled, based on AP-42 data for ferroalloy production	107
Manganese	7439965	3313	Ferromanganese production by electric arc furnace process	Sealed submerged-arc electric furnace	303	9.46 lb/MWh consumed by furn. operation	Uncontrolled, based on AP-42 data for ferroalloy production	107
Manganese	7439965	3313	Ferromanganese production by electric arc furnace process	Sealed submerged-arc electric furnace	303	0.008 lb/MWh consumed by furn. operation	Controlled by scrubbers, calculated from source tests of total particulate emissions	107
Manganese	7439965	3313	Ferromanganese production by electric arc furnace process	Semi-sealed submerged-arc electric furnace	30300701	8.2 lb/ton of product	Uncontrolled, based on AP-42 data for ferroalloy production	107
Manganese	7439965	3313	Ferromanganese production by electric arc furnace process	Semi-sealed submerged-arc electric furnace	30300701	2.33 lb/MWh consumed by furn. operation	Uncontrolled, based on AP-42 data for ferroalloy production	107
Manganese	7439965	3313	Ferromanganese production by electric arc furnace process	Semi-sealed submerged-arc electric furnace	30300701	0.08 lb/ton of product	Controlled by scrubbers, calculated from source tests of total particulate emissions	107
Manganese	7439965	3313	Ferromanganese production by electric arc furnace process	Semi-sealed submerged-arc electric furnace	30300701	0.037 lb/MWh consumed by furn. operation	Controlled by scrubbers, calculated from source tests of total particulate emissions	107
Manganese	7439965	3313	Manganese-bearing ferroalloy prod/electric arc furnace proc.	Crushing and sizing	303	0.90 lb/ton of Mn ore processed	Control status unspecified, calculated based on engineering judgement	107
Manganese	7439965	3313	Manganese-bearing ferroalloy prod/electric arc furnace proc.	Receipt and storage of Mn ore	303	0.90 lb/ton of Mn ore processed	Control status unspecified, calculated based on engineering judgement	107

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Manganese	7439965	3313	Manganese-bearing ferroalloy prod/electric arc furnace proc.	Weighing and feeding	303	0.80 lb/ton of Mn ore processed	Control status unspecified, calculated based on engineering judgement	107
Manganese	7439965	3313	Silicomanganese production by electric arc furnace process	Casting	303	0.24 lb/ton of Mn product	Control status unspecified, calculated based on engineering judgement	107
Manganese	7439965	3313	Silicomanganese production by electric arc furnace process	Crushing/grinding/sizing	303	0.13 lb/ton of Mn product	Control status unspecified, calculated based on engineering judgement	107
Manganese	7439965	3313	Silicomanganese production by electric arc furnace process	Ladle treatment	303	6.0 lb/ton of Mn product	Control status unspecified, calculated based on engineering judgement	107
Manganese	7439965	3313	Silicomanganese production by electric arc furnace process	Open submerged-arc electric furnace	30300605	0.11 lb/MWh consumed by furn. operation	Controlled by scrubbers, calculated from source tests of total particulate emissions	107
Manganese	7439965	3313	Silicomanganese production by electric arc furnace process	Sealed submerged-arc electric furnace	303	0.002 lb/MWh consumed by furn. operation	Controlled by scrubbers, calculated from source tests of total particulate emissions	107
Manganese	7439965	3313	Silicomanganese production by electric arc furnace process	Semi-sealed submerged-arc electric furnace	30300702	0.032 lb/ton of product	Controlled by scrubbers, calculated from source tests of total particulate emissions	107
Manganese	7439965	3313	Silicomanganese production by electric arc furnace process	Semi-sealed submerged-arc electric furnace	30300702	0.009 lb/MWh consumed by furn. operation	Controlled by scrubbers, calculated from source tests of total particulate emissions	107
Manganese	7439965	332	Iron foundries	Cupola	30400301	0.25 lb/ton of iron	Uncontrolled, calculated based on engineering judgement	107
Manganese	7439965	332	Iron foundries	Cupola	30400301	0.12 lb/ton of iron	Controlled by wet cap, calculated based on engineering judgement	107
Manganese	7439965	332	Iron foundries	Cupola	30400301	0.075 lb/ton of iron	Controlled by impingement scrubber, calculated based on engineering judgement	107
Manganese	7439965	332	Iron foundries	Cupola	30400301	0.012 lb/ton of iron	Controlled by high energy scrubber, calculated based on engineering judgement	107
Manganese	7439965	332	Iron foundries	Cupola	30400301	0.003 lb/ton of iron	Controlled by fabric filter, calculated based on engineering judgement	107
Manganese	7439965	332	Iron foundries	Electric arc furnace	30400304	0.15 lb/ton of iron	Uncontrolled, calculated based on engineering judgement	107
Manganese	7439965	332	Iron foundries	Electric arc furnace	30400304	0.0015 lb/ton of iron	Controlled by fabric filter (99%), calculated based on engineering judgement	107

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Manganese	7439965	332	Iron foundries	Induction furnace	30400303	0.0225 lb/ton of iron	Uncontrolled, calculated based on engineering judgement	107
Manganese	7439965	332	Steel foundries	Electric arc furnace	30400701	0.52 lb/ton of iron	Uncontrolled, calculated based on engineering judgement	107
Manganese	7439965	332	Steel foundries	Electric arc furnace	30400701	0.026 lb/ton of iron	Controlled by ESP, calculated based on engineering judgement	107
Manganese	7439965	332	Steel foundries	Electric arc furnace	30400701	0.013 lb/ton of iron	Controlled by venturi scrubber, calculated based on engineering judgement	107
Manganese	7439965	332	Steel foundries	Electric arc furnace	30400701	0.0008 lb/ton of iron	Controlled by fabric filter, calculated based on engineering judgement	107
Manganese	7439965	332	Steel foundries	Induction furnace	30400709	0.004 lb/ton of iron	Uncontrolled, calculated based on engineering judgement	107
Manganese	7439965	3321	Iron (gray) foundries	Entire process	304003	0.308 lb/ton metal produced	Based on engineering estimates	13
Manganese	7439965	369	Battery (dry cell) manufacture	Ore grinding	304	30 lb/ton of material processed	Uncontrolled, calculated based on engineering judgement	107
Manganese	7439965	369	Battery (dry cell) manufacture	Ore grinding	304	0.03 lb/ton of material processed	Controlled by fabric filter, calculated based on engineering judgement	107
Manganese	7439965	369	Battery (dry cell) manufacture	Screening tower	304	1.0 lb/ton of material processed	Uncontrolled, calculated based on engineering judgement	107
Manganese	7439965	369	Battery (dry cell) manufacture	Screening tower	304	0.001 lb/ton of material processed	Controlled by fabric filter, calculated based on engineering judgement	107
Manganese	7439965	369	Battery (dry cell) manufacture	Storage and handling emissions	304	4.4 lb/ton of material processed	Uncontrolled, calculated based on engineering judgement	107
Manganese	7439965	369	Battery (dry cell) manufacture	Storage and handling emissions	304	0.0044 lb/ton of material processed	Controlled by fabric filter, calculated based on engineering judgement	107
Manganese	7439965	3691	Battery manufacture	Entire process	30400505	0 lb/ton used	Based on engineering estimates	13
Manganese	7439965	4953	Municipal waste combustion	Incinerator stack	501001	0.014 lb/ton munic. solid waste-dry wt.	Controlled by spray-baffle scrubber, based on material balance for model incinerator	98
Manganese	7439965	4953	Municipal waste combustion	Stack	501001	0.05 lb/ton of waste incinerated	Uncontrolled, based on emission tests	107
Manganese	7439965	4953	Municipal waste combustion	Stack	501001	0.01 lb/ton of waste incinerated	Controlled by electrostatic precipitator, based on emission tests	107
Manganese	7439965	4953	Sewage sludge incineration	Stack, fluidized-bed	5o100506	0.0006 lb/ton of waste incinerated	Controlled by wet scrubber, based on emission tests	107
Manganese	7439965	4953	Sewage sludge incineration	Stack, multiple-hearth	50100506	0.004 lb/ton of waste incinerated	Controlled by wet scrubber, based on emission tests	107

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Manganese	7439965	804	Hospital waste incineration	Incinerator	50200508	9.4 x 10E-4 lb/ton	Uncontrolled, test data	147
Manganese oxide	1317346	3312	Steel production	AOD vessel - melt and refine cycle	30300?	2.5 lbs/ton specialty steel	Uncontrolled emissions	198
Manganese oxide	1317346	3312	Steel production	Electric arc furnace - charge and tap cycle	30300908	0.0096 - 0.24 lbs/ton carbon steel	Uncontrolled emissions	198
Manganese oxide	1317346	3312	Steel production	Electric arc furnace - melting/refining	30300908	0.09 - 4.8 lbs/ton carbon steel	Uncontrolled emissions	198
Manganese oxide	1317346	3312	Steel production	Electric arc furnace - melting/refining	30300908	0.09 - 0.24 lbs/ton specialty steel	Uncontrolled emissions	198
Manganese oxide	1317346	3312	Steel production	Electric arc furnace - charge and tap cycle	30300908	0.0096 - 0.012 lbs/ton carbon steel	Uncontrolled emissions	198
Manganese oxide	1317346	332	Iron foundries	Electric arc furnace - charge and tap cycle	30400304	3.8 lbs/ton of iron produced	Uncontrolled emissions	184
Manganese oxide	1317346	332	Iron foundries	Electric arc furnace - melting/refining	30400304	28 lbs/ton of iron produced	Uncontrolled emissions	184
Mercury	7439976		Coal combustion	Anthracite coal-fired boilers, util/commerc/industr	1	18 lb/10E12 Btu	Uncontrolled, based on engineering judgement	36
Mercury	7439976		Coal combustion	Anthracite coal-fired boilers, util/commerc/industr	1	9-18 lb/10E12 Btu	Controlled by ESP, based on engineering judgement	36
Mercury	7439976		Coal combustion	Anthracite coal-fired boilers, util/commerc/industr	1	1.1-8.3 lb/10E12 Btu	Controlled by scrubber, based on engineering judgement	36
Mercury	7439976		Coal combustion	Anthracite coal-fired boilers, util/commerc/industr	1	18 lb/10E12 Btu	Controlled by multiclone, based on engineering judgement	36
Mercury	7439976		Coal combustion	Bituminous coal-fired boiler, util/commerc/industr	1	14 lb/10E12 Btu	Uncontrolled, based on engineering judgement	36
Mercury	7439976		Coal combustion	Bituminous coal-fired boiler, util/commerc/industr	1	14 lb/10E12 Btu	Controlled by multicyclone, based on engineering judgement	36
Mercury	7439976		Coal combustion	Bituminous coal-fired boiler, util/commerc/industr	1	9-14 lb/10E12 Btu	Controlled by ESP, based on engineering judgement	36

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Mercury	7439976		Coal combustion	Bituminous coal-fired boiler, util/commerc/industr	1	0.96-7.4 lb/10E12 Btu	Controlled by scrubber, based on engineering judgement	36
Mercury	7439976		Coal combustion	Lignite coal-fired boilers, util/commerc/industr	1	21 lb/10E12 Btu	Uncontrolled, based on engineering judgement	36
Mercury	7439976		Coal combustion	Lignite coal-fired boilers, util/commerc/industr	1	21 lb/10E12 Btu	Controlled by multiclone, based on engineering judgement	36
Mercury	7439976		Coal combustion	Lignite coal-fired boilers, util/commerc/industr	1	10-21 lb/10E12 Btu	Controlled by ESP, based on engineering judgement	36
Mercury	7439976		Coal combustion	Lignite coal-fired boilers, util/commerc/industr	1	1.2-9.6 lb/10E12 Btu	Controlled by scrubber, based on engineering judgement	36
Mercury	7439976		Coal combustion, residential	Anthracite coal-fired boilers		12.2 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	36
Mercury	7439976		Coal combustion, residential	Bituminous coal-fired boilers		20.7 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	36
Mercury	7439976		Coal combustion, residential	Boilers fired by coal from appalachian region		16.0 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Mercury	7439976		Coal combustion, residential	Boilers fired by coal from interior region		10.5 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Mercury	7439976		Coal combustion, residential	Boilers fired by coal from northern plains region		18.1 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Mercury	7439976		Coal combustion, residential	Boilers fired by coal from rocky mountain region		20.8 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Mercury	7439976		Coal combustion, residential	Lignite coal-fired boilers		10.0 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	36
Mercury	7439976		Coal combustion, residential	Subbituminous coal-fired boilers		12.8 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	36
Mercury	7439976		General laboratory use	General handling, experimental, or other losses		80 lb/ton of Hg used	Control status unspecified, based on engineering judgement	113
Mercury	7439976		Internal combustion engines - stationary	Reciprocating engine - natural gas fuel	20200202	11.363 lb/10E12 Btu	Uncontrolled emissions	213

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Mercury	7439976		Internal combustion engines - stationary	Reciprocating engine - distillate oil fuel	20200102	0.3814 lb/10E12 Btu	Uncontrolled emissions	213
Mercury	7439976		Internal combustion engines - stationary	Gas turbine - natural gas fuel	20200201	11.363 lb/10E12 Btu	Uncontrolled emissions	213
Mercury	7439976		Internal combustion engines - stationary	Gas turbine - distillate oil fuel	20200101	0.9044 lb/10E12 Btu	Uncontrolled emissions	213
Mercury	7439976		Natural gas combust.on - comercial/institutional	Tangential or wall-fired boiler	103004	11.363 lb/10E12 Btu	Uncontrolled emissions	213
Mercury	7439976		Oil combustion	Distillate oil-fired boiler, util/comerc/industr/residential	1	3.0 lb/10E12 Btu	Uncontrolled, based on engineering judgement	34
Mercury	7439976		Oil combustion	Distillate oil-fired boiler, util/comerc/industr/residential	1	3.0 lb/10E12 Btu	Controlled by multiclone, base on engineering judgement	34
Mercury	7439976		Oil combustion	Distillate oil-fired boiler, util/comerc/industr/residential	1	2.25 lb/10E12 Btu	Controlled by ESP, based on engineering judgement	34
Mercury	7439976		Oil combustion	Distillate oil-fired boiler, util/comerc/industr/residential	1	0.78 lb/10E12 Btu	Controlled by scrubber, based on engineering judgement	34
Mercury	7439976		Oil combustion	Residual oil-fired boiler, util/comerc/industr/residential	1	3.2 lb/10E12 Btu	Uncontrolled, based on engineering judgement	34
Mercury	7439976		Oil combustion	Residual oil-fired boiler, util/comerc/industr/residential	1	3.2 lb/10E12 Btu	Controlled by multiclone, based on engineering judgement	34
Mercury	7439976		Oil combustion	Residual oil-fired boiler, util/comerc/industr/residential	1	2.4 lb/10E12 Btu	Controlled by ESP, based on engineering judgement	34
Mercury	7439976		Oil combustion	Residual oil-fired boiler, util/comerc/industr/residential	1	0.83 lb/10E12 Btu	Controlled by scrubber, based on engineering judgement	34

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Mercury	7439976		Paint application	Entire process	402	1310 lb/ton of contained Hg	Uncontrolled, based on engineering judgement	113
Mercury	7439976		Wood combustion, residential	Woodstove without baffle		2.6 x 10E-4 lb/ton wood burned	Uncontrolled, based on one study, nonbaffled stove burning green pine	98
Mercury	7439976	0721	Agricultural spraying	Entire process		1000 lb/ton of contained Hg	Uncontrolled, based on engineering judgement	113
Mercury	7439976	1099	Mercury mining	Entire process	303024	0.01 lb/ton of ore mined	Uncontrolled, based on questionnaire survey responses by mine operators in 1960s	113
Mercury	7439976	12	Coal refuse pile burning	Refuse pile	50300204	9.2 x 10E-9 lb/hr/ton burning coal refus		136
Mercury	7439976	1311	Oil shale retorting	Entire process		2.2 x 10E-4 lbs/barrel oil produced	Includes Hg compound form, assumes fac. using 13,000 tons/day raw shale to prod. 12,000 bbl/day oil	40
Mercury	7439976	2812	Chlorine production (chlor-alkali)	Mercury cell process, cell room ventilation, fan ventilation (one fan)	301008	0.04 lb/100 ton Cl2 produced	Uncontrolled, based on source tests	113
Mercury	7439976	2812	Chlorine production (chlor-alkali)	Mercury cell process, cell room ventilation, ridge vent	301008	0.4 lb/100 ton Cl2 produced	Uncontrolled, based on source tests	113
Mercury	7439976	2812	Chlorine production (chlor-alkali)	Mercury cell process, end-box ventilation	301008	1 lb/100 ton Cl2 produced	Uncontrolled, based on source tests	113
Mercury	7439976	2812	Chlorine production (chlor-alkali)	Mercury cell process, hydrogen stream losses	301008	2 lb/100 ton Cl2 produced	Uncontrolled, based on material balance	113
Mercury	7439976	2812	Chlorine production (chlor-alkali)	Mercury cell process, hydrogen stream losses	301008	0.2 to 1 lb/100 ton Cl2 produced	Uncontrolled, based on source tests	113
Mercury	7439976	2812	Chlorine production (chlor-alkali)	Mercury cell process, hydrogen stream losses	301008	0.1 lb/100 ton Cl2 produced	Controlled by carbon adsorber, based on source tests	113
Mercury	7439976	2812	Chlorine production (chlor-alkali)	Mercury cell process, ventilation losses	301008	4 lb/100 ton Cl2 produced	Uncontrolled, based on material balance	113
Mercury	7439976	2812	Chlorine production (chlor-alkali)	End-box ventilation stream		1.82 x 10E-5 - 1.21 x 10E-2 lb/ton	Range of controlled factors for a combination of 18 different controls	148
Mercury	7439976	2812	Chlorine production (chlor-alkali)	Hydrogen stream		6.70 x 10E-6 - 6.75 x 10E-3 lb/ton	Range of controlled factors for a combination of 18 different controls	148
Mercury	7439976	2951	Asphaltic concrete production	Plant stack	305002	<1.1 x 10E-9 lb/ton concrete	Controlled (unspecified) from a single plant, average of 2 values, range is 8.8 x 10E-10 - 1.3 x 10E-9	170
Mercury	7439976	2951	Asphaltic concrete production	Plant stack	305002	<2.07 x 10E-9 lb/ton concrete	Uncontrolled from a single plant, average of 2 values, range is 1.5 x 10E-9 - 2.6 x 10E-9	170

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Mercury	7439976	3313	Ferroalloy production	Electric arc furnace, open, ferromanganese	30300701	0.0027 lb/mw-hr energy consumed by furnace	Uncontrolled	169
Mercury	7439976	3313	Ferroalloy production	Electric arc furnace, sealed, silicomanganese	30300701	9.3 x 10E-5 lb/mw-hr energy consumed by furnace	Controlled, venturi scrubber	169
Mercury	7439976	3313	Ferroalloy production	Electric arc furnace, semi-sealed, ferrosilicon	30300702	8.36 x 10E-6 lb/mw-hr energy consumed by furnace	Uncontrolled	169
Mercury	7439976	3339	Primary mercury production	Hoeing operations	303	0.02 lb/ton ore processed	Uncontrolled, based on stack tests (early 1970s)	113
Mercury	7439976	3339	Primary mercury production	Retort operation	303	0.002 lb/ton ore processed	Uncontrolled, based on stack tests (early 1970s)	113
Mercury	7439976	3339	Primary mercury production	Smelter stack	303	0.32 lb/ton ore processed	Uncontrolled, based on stack tests (early 1970s)	113
Mercury	7439976	3341	Secondary mercury production	Entire process	304	40 lb/ton Hg processed	Uncontrolled, based on engineering judgement	113
Mercury	7439976	3341	Secondary mercury production	Entire process, production by vacuum distillation	304	0.052 lb/ton of Hg produced	Control status and basis unspecified	112
Mercury	7439976	36	Electrical apparatus manufacture	Handling of Hg or its compounds	3	8 lb/ton Hg used	Uncontrolled, based on engineering judgement	113
Mercury	7439976	3691	Battery manufacture	Entire process	3	1.4 lb/ton Hg used	Control status unspecified, based on emission inventory data for three facilities	111
Mercury	7439976	38	Instrument manufacture	Breakage, spillage and other sources	399999	18 lb/ton of contained Hg	Uncontrolled, based on survey responses (1960s)	113
Mercury	7439976	491	Natural gas combustion - utility	Tangential-fired boiler	10100604	2.27 lb/10E12 Btu	Controlled emissions, wet scrubber at 80% efficiency for Hg	213
Mercury	7439976	491	Natural gas combustion - utility	Wall-fired boiler	10100601	2.272 lb/10E12 Btu	Controlled emissions, wet scrubber at 80% efficiency for Hg	213
Mercury	7439976	491	Natural gas combustion - utility	Tangential-fired boiler	10100604	11.363 lb/10E12 Btu	Uncontrolled emissions, based on stack tests	213
Mercury	7439976	491	Natural gas combustion - utility	Wall-fired boiler	10100601	11.363 lb/10E12 Btu	Uncontrolled emissions, based on stack tests	213
Mercury	7439976	4953	Municipal waste combustion	Incinerator stack	501001	0.002 lb/ton munic. solid waste-dry wt.	Controlled by spray-baffle scrubber, calculated based on engineering judgement	98

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Mercury	7439976	4953	Municipal waste combustion	Mass burn facility	501001	0.0034 lb/ton charged material	Uncontrolled	40
Mercury	7439976	4953	Municipal waste combustion	Mass burn, refractory facility	501001	13.54 lb/ton controlled particulate emissions	Controlled by ESP, based on source test	118
Mercury	7439976	4953	Municipal waste combustion	Mass burn, refractory facility	501001	7.4 lb/ton controlled particulate emissions	Controlled by fabric filter, assumes 80% Hg control efficiency	118
Mercury	7439976	4953	Municipal waste combustion	Mass burn, water wall incinerator	501001	16.326 lb/ton controlled particulate emissions	Controlled by ESP, based on source tests	118
Mercury	7439976	4953	Municipal waste combustion	Mass burn, water wall incinerator	501001	11.6 lb/ton controlled particulate emissions	Controlled by fabric filter, assumes 80% Hg control efficiency	118
Mercury	7439976	4953	Municipal waste combustion	Modular incinerator	501001	4.48 lb/ton controlled particulate emissions	Controlled by ESP, based on source tests	118
Mercury	7439976	4953	Municipal waste combustion	Modular incinerator	501001	3.4 lb/ton controlled particulate emissions	Controlled by fabric filter, assumes 80% Hg control efficiency	118
Mercury	7439976	4953	Municipal waste combustion	Modular incinerator	501001	0.008 lb/ton charged material	Uncontrolled	40
Mercury	7439976	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	1.736 lb/ton controlled particulate emissions	Controlled by ESP, based on source tests	118
Mercury	7439976	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	1.24 lb/ton controlled particulate emissions	Controlled by fabric filter, assumes 80% Hg control efficiency	118
Mercury	7439976	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	0.0022 lb/ton charged material	Uncontrolled	40
Mercury	7439976	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	0.0028 lb/ton RDF combusted	100% RDF fuel only, ESP control only, overall average of serveral source averages, range is 0.00092 - 0.042 lb/ton	180
Mercury	7439976	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	0.0046 lb/ton RDF combusted	100% RDF only, uncontrolled, overall average of serveral source averages, range is 0.0022 - 0.0092 lb/ton	180
Mercury	7439976	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	0.00052 lb/ton RDF combusted	Spray drying after acid gas and PM control, overall avg. of several source avgs., 100% RDF fuel only, range is 3.2 x 10E-5 - 0.00104 lb/ton	180
Mercury	7439976	4953	Municipal waste combustion	Modular starved-air combustor	501001	0.0082 lb/ton feed	ESP control only, overall average of several source averages, range is 0.0052 - 0.0112 lb/ton	180
Mercury	7439976	4953	Municipal waste combustion	Modular starved-air combustor	501001	0.0048 lb/ton feed	Uncontrolled, overall average of several source averages, range is 0.00112 - 0.0072 lb/ton	180

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Mercury	7439976	4953	Municipal waste combustion	Modular excess-air combustor	501001	0.0015 lb/ton feed	ESP control only, overall average of several source averages, range is 0.00092 - 0.0020 lb/ton	180
Mercury	7439976	4953	Municipal waste combustion	Modular excess-air combustor	501001	2 x 10E-9 lb/ton feed	Dry sorbent injection after acid gas and PM control, one data point only	180
Mercury	7439976	4953	Municipal waste combustion	Mass burn, water wall incinerator	501001	0.00172 lb/ton feed	Uncontrolled, one data point only	180
Mercury	7439976	4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	0.0064 lb/ton feed	Capacity > 600 tons/day, ESP control only, one data point only	180
Mercury	7439976	4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	0.0070 lb/ton feed	Capacity > 600 tons/day, spray drying after acid gas and PM control, overall avg. of several source avgs., range is 0.0052 - 0.0088 lb/ton	180
Mercury	7439976	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	0.0028 lb/ton feed	Capacity < 600 tons/day, uncontrolled, one data point only	180
Mercury	7439976	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	0.0064 lb/ton feed	Capacity < 600 tons/day, ESP control only, overall avg. of several source averages, range is 0.0036 - 0.0086 lb/ton	180
Mercury	7439976	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	0.0026 lb/ton feed	Capacity < 600 tons/day, spray drying after acid gas and PM control, overall avg. of several source avgs., range is 0.0022 - 0.0028 lb/ton	180
Mercury	7439976	4953	Municipal waste combustion	Mass burn waterwall combustor, built before 1980	501001	0.0014 lb/ton feed	Uncontrolled, overall average of several source averages, range is 0.00017 - 0.036 lb/ton	180
Mercury	7439976	4953	Municipal waste combustion	Mass burn waterwall combustor, built before 1980	501001	0.0022 lb/ton feed	Dry sorbent injection after acid gas and PM control, one data point only	180
Mercury	7439976	4953	Municipal waste combustion	Mass burn waterwall combustor, built before 1980	501001	0.0104 lb/ton feed	ESP control only, overall average of several source averages, range is 0.00022 - 0.0214 lb/ton	180
Mercury	7439976	4953	Municipal waste combustion	Mass burn, refractory facility	501001	0.0015 lb/ton feed	Spray drying after acid gas and PM control, one data point only	180
Mercury	7439976	4953	Municipal waste combustion	Mass burn, refractory facility	501001	0.0112 lb/ton feed	ESP control only, overall average of several source averages, range is 0.0086 - 0.0134 lb/ton	180
Mercury	7439976	4953	Municipal waste combustion	Mass burn, refractory facility	501001	0.012 lb/ton feed	Uncontrolled, one data point only	180
Mercury	7439976	4953	Sewage sludge incineration	Stack	50100506	0.0014 lb/ton dry sludge	Assumes 100% emitted, conventional scrubbers have low Hg concentration efficiency	155

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Mercury	7439976	4953	Sewage sludge incineration	Sludge incineration furnace	50100504	0.0070 - 0.006 lb/ton dry sludge incin.	Water scrubber ctrl, eff ranging from 68-96%, ave 5 tests 1.49 g/Metric ton dry sludge incinerated	197
Mercury	7439976	4953	Sewage sludge incineration	Incinerator		0.0039 lb/ton sludge charged	Unspecified, emission factor is average for 25 facilities	140
Mercury	7439976	80	Pharmaceuticals containing mercuric compounds application	Entire process		400 lb/ton of Hg applied	Uncontrolled, based on engineering judgement	113
Mercury	7439976	8021	Dental preparations use	Handling losses		20 lb/ton of Hg handled	Control status unspecified, based on engineering judgement	113
Methanol	67561	2861	Charcoal manufacture	Batch kiln	30100403	22 lb/ton charcoal	Controlled, afterburner, engineering judgement	124
Methanol	67561	2861	Charcoal manufacture	Continuous furnace	30100404	7.4 lb/ton charcoal	Controlled, afterburner, engineering judgement	124
Methanol	67561	2861	Charcoal manufacture	Overall process	30100401	144 lb/ton charcoal manufactured	Uncontrolled, range of 134-152 lb/ton, engineering judgement	124
Methanol	67561	2869	Diethyl terephthalate production by methanol esterification	Recycled and fresh methanol storage tank vents	301031	0.26 lb/ton diethyl terephthalate prod.	Uncontrolled, based on hypothetical plant operating 8760 h/yr and having 5.93 x 10E8 lb/yr capacity	42
Methanol	67561	2869	Diethyl terephthalate production by methanol esterification	Recycled and fresh methanol storage tank vents	301031	0.026 lb/ton diethyl terephthalate prod	Controlled by water absorber, based on hypothetical plant operating 8760 h/yr & 5.39x10E8 lb/yr cap	42
Methanol	67561	2869	Glycol ether production - methanol process	Vacuum system vent	30125302	0.126 lb/ton glycol ether produced	Uncontrolled, approximation based on data from one plant	142
2-Methoxyethanol	109864	2869	Glycol ether production - methanol process	Vacuum system vent	30125302	0.188 lb/ton glycol ether produced	Uncontrolled, approximation based on data from one plant	142
2-(2-Methoxyethoxy) ethanol	111773	2869	Glycol ether production - methanol process	Vacuum system vent	30125302	0.126 lb/ton glycol ether produced	Uncontrolled, approximation based on data from one plant	142
1-Methoxy-2-propanol	107982	7699	Tank truck cleaning	Entire process	49004	0.062 lb/truck cleaned	Emission measurement	97
Methyl acetate	79209	2869	Terephthalic acid (crude) production	Reactor vent	30103102	14 lb/ton crude TPA produced	Uncontrolled	42
Methyl ethyl ketone	78933	267	Paper coating	Coating line	40201301	8.01 x 10E-8 lb/ft paper coated	Based on one sampling program, sampled at discharge of afterburner	11
Methyl ethyl ketone	78933	2865	Acetone/phenol manufacture from cumene	Cleavage section vents (combined)	30120211	3.6 x 10E-5 lb/ton phenol	Controlled (unspecified), based on test data, 1977 data, average factors	128
Methyl ethyl ketone	78933	2865	Acetone/phenol manufacture from cumene	Cumene peroxidation vent	30120202	0.10 lb/ton phenol	Controlled (not specified), based on sampling, 1977 data, average factors	128

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Methyl ethyl ketone	78933	4953	Sewage sludge incineration	Multiple hearth furnace	50100506	0.01076 lb/ton dry sludge	Average of three tests, scrubber	101
Methyl methacrylate	80626	7699	Tank truck cleaning	Entire process	49004	0.071 lb/truck cleaned	Emission measurement	97
Methyl thiophene			Scrap tire, open burning	Tires in experimental burn hut		0.28 lb/ton tire	VOST samples burn rate - 1.5 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Methyl thiophene			Scrap tire, open burning	Tires in experimental burn hut		0.051 lb/ton tire	VOST samples burn rate - 0.9 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Methyl thiophene			Scrap tire, open burning	Tires in experimental burn hut		0.063 lb/ton tire	VOST samples burn rate - 1.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Methyl thiophene			Scrap tire, open burning	Tires in experimental burn hut		0.049 lb/ton tire	VOST samples burn rate - 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
3-Methylbutyraldehyde	590863	2865	Acetone/phenol manufacture from cumene	Cleavage section vents (combined)	30120211	1.7 x 10E-6 lb/ton phenol	Controlled (unspecified), based on test data, 1977 data, average factors	125
1-Methyl-1-cyclohexene	591491		Scrap tire, open burning	Tires in experimental burn hut		0.0534 lb/ton tire	VOST samples burn rate - 1.5 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
1-Methyl-1-cyclohexene	591491		Scrap tire, open burning	Tires in experimental burn hut		0.028 lb/ton tire	VOST samples burn rate - 2.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
1-Methyl-1-cyclohexene	591491		Scrap tire, open burning	Tires in experimental burn hut		0.116 lb/ton tire	VOST samples burn rate - 0.9 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
1-Methyl-1-cyclohexene	591491		Scrap tire, open burning	Tires in experimental burn hut		0.079 lb/ton tire	VOST samples burn rate - 1.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
1-Methyl-1-cyclohexene	591491		Scrap tire, open burning	Tires in experimental burn hut		0.053 lb/ton tire	VOST samples burn rate - 1.4 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
1-Methyl-1-cyclohexene	591491		Scrap tire, open burning	Tires in experimental burn hut		0.151 lb/ton tire	VOST samples burn rate - 0.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
1-Methyl-1-cyclohexene	591491		Scrap tire, open burning	Tires in experimental burn hut		0.248 lb/ton tire	VOST samples burn rate - 0.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Methylene chloride	75092		Aerosol packaging	Entire process		19.4 lb/ton MC consumed	Uncontrolled, based on aggregate emissions/consumption for 10 questionnaire respondents	74,75
Methylene chloride	75092		Aerosol products use	Entire process		2000 lb/ton MC contained in product appl	Uncontrolled, based on engineering judgement	69
Methylene chloride	75092		Degreasing operations using MC	Cold cleaner	40100302	1780 lb/ton fresh (virgin) MC used	Uncontrolled, considers recycle, based on material balance	76
Methylene chloride	75092		Degreasing operations using MC	Cold cleaner	40100302	1740 lb/ton fresh (virgin) MC used	Contr = 0.7 freeboard ratio + drainage rack w/ 15 sec. drain time, considers recycle, mater. balance	76

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Methylene chloride	75092		Degreasing operations using MC	Conveyorized vapor degreaser	40100224	1920 lb/ton fresh (virgin) MC used	Uncontrolled, considers recycle, material balance	76
Methylene chloride	75092		Degreasing operations using MC	Conveyorized vapor degreaser	40100224	1820 lb/ton fresh (virgin) MC used	Controlled by carbon adsorber or refrig. freeboard chiller, considers recycle, material balance	76
Methylene chloride	75092		Degreasing operations using MC	Open top vapor degreasers	40100204	1860 lb/ton fresh (virgin) MC used	Uncontrolled, considers recycle, material balance	76
Methylene chloride	75092		Degreasing operations using MC	Open top vapor degreasers	40100204	1780 lb/ton fresh (virgin) MC used	Controlled by refrigerated freeboard chiller, considers recycle, material balance	76
Methylene chloride	75092		Paint stripping	Dip tanks at durable goods manufacturers	402	1200 lb/ton MC contained in stripper use	Uncontrolled, based on material balances for 3 auto manufac. facilities & 1 aircraft maint. facility	157
Methylene chloride	75092		Paint stripping	Dip tanks at durable goods manufacturers	402	400 lb/ton MC contained in stripper used	Controlled by water seal and 15 sec. drain time, assumes 60% emission reduction	157
Methylene chloride	75092		Paint stripping	Floor stripping	402	2000 lb/ton MC contained in stripper use	Uncontrolled, based on questionnaire responses for auto plants and engineering judgement	157
Methylene chloride	75092		Paint stripping	General emissions	401	2000 lb/ton used	Assume all is eventually released to atmosphere	13
Methylene chloride	75092	2821	Plastics processing	General solvent use	301010	2000 lb/ton used	Assume all is eventually released to atmosphere	13
Methylene chloride	75092	2851	Paint stripper formulation	Entire process	301	100 lb/ton of MC consumed	Uncontrolled, based on aggregate estimates of emissions and consumption at formulation facilities	157
Methylene chloride	75092	2869	Acetaldehyde production	Off-gas vent	30112014	0.2 lb/ton acetaldehyde	Controlled, low pressure scrubber, data from one plant	143
Methylene chloride	75092	2869	Chloromethane production - methane chlorination	Recycled methane inert gas purge vent	30112511	0.102 lb/ton total chloromethanes consc.	Uncontrolled, based on information supplied by one producer	71
Methylene chloride	75092	2869	Chloromethane production - methanol/CH3Cl chlorination	Inert-gas purge vent for condenser associated with MC distillation	30112510	0.038 lb/ton total chloromethanes prod.	Uncontrolled, hypoth. fac. producing 25% methyl chloride, 40% MC, 25% chloroform, & 2% carbon tet.	72
Methylene chloride	75092	2869	Ethylene dichloride production - oxyhydrochlor. of ethylene	Absorption unit	30112501	(0.004 lb/ton EDC produced	Control status and basis unspecified	99
Methylene chloride	75092	2869	Ethylene dichloride production - oxyhydrochlor. of ethylene	Separation unit	30112501	0.003 lb/ton EDC produced	Control status and basis unspecified	99
Methylene chloride	75092	2869	Methane chlorination	Fugitive emissions	30112514	0.44 lb/ton product	Derived from site visit	13
Methylene chloride	75092	2869	Methane chlorination	Inert gas purge vent/product recovery condenser	30112511	0.38 lb/ton product	Derived from site visit	13

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Methylene chloride	75092	2869	Methane chlorination	Storage	407040	2.04 lb/ton product	Derived from site visit	13
Methylene chloride	75092	2869	Methyl chloride chlorination	Fugitive emissions	30112514	0.946 lb/ton product	Derived from site visit	13
Methylene chloride	75092	2869	Methyl chloride chlorination	Inert gas purge vent/product recovery condenser	30112511	0.052 lb/ton product	Derived from site visit	13
Methylene chloride	75092	2869	Methyl chloride chlorination	Storage	407040	4.92 lb/ton product	Derived from site visit	13
Methylene chloride	75092	2869	Methylene chloride production	Entire process	30112910	6 lb/ton MC produced	Reflects 1983 controls, based on 1983 aggregate emis. production totals for MC producers	69
Methylene chloride	75092	3086	Polyurethane foam (flexible slabstock) production	Equipment leak emissions	3010189	34 lb/ton of MC consumed	Uncontrolled, based on SOCMI VOC emission factors and questionnaire responses	73
Methylene chloride	75092	3086	Polyurethane foam (flexible slabstock) production	Equipment leak emissions	3010189	10 lb/ton of MC consumed	Controlled by leak detection and repair, based on engineering judgement	73
Methylene chloride	75092	3086	Polyurethane foam (flexible slabstock) production	Process vents (foam tunnel, curing area)	3010189	1940 lb/ton of MC consumed	Uncontrolled, based on facility questionnaire responses and engineering judgement	73
Methylene chloride	75092	3086	Polyurethane foam (flexible slabstock) production	Process vents (foam tunnel, curing area)	3010189	840 lb/ton of MC consumed	Curing area vents uncontrol., foam tunnel vents control. by encl. & carbon adsorb, engineering judg.	73
Methylene chloride	75092	3086	Polyurethane foam (flexible slabstock) production	Storage tank emissions	30101894	6 lb/ton of MC consumed	Uncontrolled, calculated from questionnaire responses using AP-42 equations	73
Methylene chloride	75092	3086	Polyurethane foam (flexible slabstock) production	Storage tank emissions	30101894	1 lb/ton of MC consumed	Controlled by refrigerated condenser, based on engineering judgement	73
Methylene chloride	75092	3086	Polyurethane foam production	Entire process	3010189	2000 lb/ton MC consumed	Uncontrolled, based on engineering judgement	69
Methylene chloride	75092	3679	Printed circuit board manufacture	Photoresist stripping	40100302	1800 lb/ton fresh (virgin) MC used	Uncontrolled, based on material balance	76
Methylene chloride	75092	3679	Printed circuit board manufacture	Photoresist stripping	40100302	1560 lb/ton fresh (virgin) MC used	Controlled by carbon adsorber, based on material balance	76
Methylene chloride	75092	3711	Paint stripping	Spray booth maintenance at automobile assembly plants	40301402	1600 lb/ton MC contained in stripper use	Uncontrolled, based on questionnaire responses and engineering judgement	187

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Methylene chloride	75092	45	Paint stripping	Aircraft (military and commercial)	490	1600 lb/ton MC contained in stripper use	Uncontrolled, based on material balances for 2 commercial aircraft maintenance facilities	157
Methylene chloride	75092	4953	Sewage sludge incineration	Fluidized-bed furnace	50100506	1.4 x 10E-4 lb/ton dry sludge	One test, scrubber	101
Methylene chloride	75092	4953	Sewage sludge incineration	Multiple hearth furnace	50100506	0.0046 lb/ton dry sludge	Average of five tests, scrubber	101
Methylene chloride	75092	4953	Wastewater treatment	POTW	50100701	1040 lb/ton methylene chlor. in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
Methylene chloride	75092	5169	Chemical distribution facilities	Handling emissions (filling losses)	4	1.8 lb/ton MC distributed	Partially controlled, based on nationwide emiss. & distribution estim. for dist. facilities in 1983	69
Methylene chloride	75092	5169	Chemical distribution facilities	Storage tank emissions	4	2 lb/ton MC distributed	Uncontrolled, based on nationwide emissions and distribution estimates for distr. facilities in 1983	69
Methylene chloride	75092	7384	Photographic film processing	Splicing glue		2000 lb/ton MC in splicing glue applied	Uncontrolled, based on engineering judgement	69
Methylene chloride	75092	753	Degreasing operations using MC	Carburetor cleaners	40100302	1780 lb/ton fresh (virgin) MC used	Uncontrolled, considers recycle, material balance	76
Methylene chloride	75092	753	Degreasing operations using MC	Carburetor cleaners	40100302	1520 lb/ton fresh (virgin) MC used	Controlled by water cover, considers recycle, material balance	76
Methylene chloride	75092	7641	Paint stripping	Furniture stripping (household and commercial)	490	2000 lb/ton MC contained in stripper use	Uncontrolled, based on engineering judgement	157
Methylene chloride	75092	9711	Paint stripping	Dip tanks at military installations	490	800 lb/ton MC contained in stripper used	Uncontrolled, based on material balances for 3 military installations using dip tanks	157
1-Methylnaphthalene	90120		Scrap tire, open burning	Tires in experimental burn hut		0.459 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.3 kg/hr, uncontrolled	212
2-Methylnaphthalene	91576		Scrap tire, open burning	Tires in experimental burn hut		0.981 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.3 kg/hr, uncontrolled	212
2-Methylnaphthalene	91576		Scrap tire, open burning	Tires in experimental burn hut		0.677 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr	212
1-Methylnaphthalene	90120		Scrap tire, open burning	Tires in experimental burn hut		0.451 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr, uncontrolled	212
2-Methylnaphthalene	91576		Scrap tire, open burning	Tires in experimental burn hut		0.747 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr, uncontrolled	212
2-Methylnaphthalene	91576		Scrap tire, open burning	Tires in experimental burn hut		1.118 lb/ton tire	XAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 1.7 kg/hr, uncontrolled	212

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
1-Methylnaphthalene	90120		Scrap tire, open burning	Tires in experimental burn hut		1.10 lb/ton tire	IAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 1.7 kg/hr, uncontrolled	212
2-Methylnaphthalene	91576		Scrap tire, open burning	Tires in experimental burn hut		0.166 lb/ton tire	IAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 1.7 kg/hr	212
1-Methylnaphthalene	90120		Scrap tire, open burning	Tires in experimental burn hut		0.219 lb/ton tire	IAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 2.3 kg/hr, uncontrolled	212
2-Methylnaphthalene	91576		Scrap tire, open burning	Tires in experimental burn hut		0.291 lb/ton tire	IAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 2.3 kg/hr, uncontrolled	212
Methylnaphthalene	1321944		Scrap tire, open burning	Tires in experimental burn hut		0.217 lb/ton tire	VOST samples burn rate = 1.5 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Methylnaphthalene	1321944		Scrap tire, open burning	Tires in experimental burn hut		0.290 lb/ton tire	VOST samples burn rate = 2.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Methylnaphthalene	1321944		Scrap tire, open burning	Tires in experimental burn hut		0.61 lb/ton tire	VOST samples burn rate = 0.9 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Methylnaphthalene	1321944		Scrap tire, open burning	Tires in experimental burn hut		0.177 lb/ton tire	VOST samples burn rate = 1.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Methylnaphthalene	1321944		Scrap tire, open burning	Tires in experimental burn hut		0.326 lb/ton tire	VOST samples burn rate = 1.4 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Methylnaphthalene	1321944		Scrap tire, open burning	Tires in experimental burn hut		0.341 lb/ton tire	VOST samples burn rate = 0.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Methylnaphthalene	1321944		Scrap tire, open burning	Tires in experimental burn hut		1.04 lb/ton tire	VOST samples burn rate = 0.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Methylnaphthalene	1321944		Scrap tire, open burning	Tires in experimental burn hut		0.249 lb/ton tire	VOST samples burn rate = 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Methylnaphthalene	1321944		Scrap tire, open burning	Tires in experimental burn hut		0.433 lb/ton tire	VOST samples burn rate = 3.9 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Methylnaphthalene	1321944		Scrap tire, open burning	Tires in experimental burn hut		0.324 lb/ton tire	VOST samples burn rate = 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Methylnaphthalene	1321944		Scrap tire, open burning	Tires in experimental burn hut		0.139 lb/ton tire	VOST samples burn rate = 2.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Methylnaphthalene	1321944		Scrap tire, open burning	Tires in experimental burn hut		0.260 lb/ton tire	VOST samples burn rate = 6.63 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
4-Methyl-2-nitrophenol	119339	4953	Sewage sludge incineration	Fluidized-bed furnace	50100504	(9.4 x 10E-8 lb/ton sludge	One test, scrubber	101

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
4-Methyl-2-nitrophenol	119335	4953	Sewage sludge incineration	Multiple hearth furnace	50100506	(5.6 x 10E-5 lb/ton dry sludge	One test, scrubber	101
2-Methylpropane	75285	2895	Carbon black manufacture - oil furnace	Main process purge vent	30100504	0.20 lb/ton carbon black produced	Based on test data	97
Methylstyrene	25013154	2865	Acetone/phenol manufacture from cumene	Cumene peroxidation vent	30120202	0.0002 lb/ton phenol	Controlled (not specified), based on sampling, 1977 data, average factors	125
Methylstyrene	25013154	2865	Acetone/phenol manufacture from cumene	Storage tank vents	40736	0.004 lb/ton phenol	Controlled (unspecified), based on test data, 1977 data, average factors	125
Molybdenum	7439987		Wood combustion, residential	Woodstove without baffle		4.4 x 10E-4 lb/ton wood burned	Uncontrolled, based on one study, nonbaffled stove burning green pine	98
Molybdenum	7439987	226	Woven fabric finishing	Curing oven - resin finish	330001	1.34 x 10E-4 lb/ton fabric	Uncontrolled, average of two tests	92
Molybdenum	7439987	226	Woven fabric finishing	Heat setting	330001	4.8 x 10E-4 lb/ton fabric	Uncontrolled, based on test data	92
Molybdenum	7439987	226	Woven fabric finishing	Tenter frames - resin finishing	330001	8.6 x 10E-4 lb/ton fabric	Uncontrolled, average of three tests	92
Molybdenum	7439987	226	Woven fabric finishing	Thermosol dyeing	330001	6 x 10E-5 lb/ton fabric	Uncontrolled, average of three tests	92
Monochlorodibenzofurans, total		4953	Sewage sludge incineration	Multiple hearth furnace	50100506	8 x 10E-8 lb/ton dry sludge	Average of two tests, scrubber	101
Naphthalene	91203		Naphthalene production	Process emissions		0.478 lb/ton naphthalene produced	Based on FOM emissions and 87% naphthalene	99
Naphthalene	91203		Naphthalene production	Storage		0.0454 lb/ton produced	Based on data from State files and engineering judgement	99
Naphthalene	91203		Scrap tire, open burning	Tires in experimental burn hut		2.64 lb/ton tire	IAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.3 kg/hr, uncontrolled	212
Naphthalene	91203		Scrap tire, open burning	Tires in experimental burn hut		1.914 lb/ton tire	IAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr, uncontrolled	212
Naphthalene	91203		Scrap tire, open burning	Tires in experimental burn hut		4.631 lb/ton tire	IAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 1.7 kg/hr, uncontrolled	212
Naphthalene	91203		Scrap tire, open burning	Tires in experimental burn hut		2.180 lb/ton tire	IAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 2.3 kg/hr, uncontrolled	212
Naphthalene	91203		Scrap tire, open burning	Tires in experimental burn hut		1.089 lb/ton tire	Sum of PAH analy on lic extrat. of IAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.3 kg/hr, controlled	212
Naphthalene	91203		Scrap tire, open burning	Tires in experimental burn hut		0.894 lb/ton tire	Sum of PAH analy on lic extrat. of IAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.1 kg/hr, controlled	212

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Naphthalene	91203		Scrap tire, open burning	Tires in experimental burn hut		1.827 lb/ton tire	Sum of PAH analy on liq extrct. of XAD-2 test & filter compnt. shred condition = 2" by 2" piece, burn rate=1.7 kg/hr, controlled	212
Naphthalene	91203		Scrap tire, open burning	Tires in experimental burn hut		1.436 lb/ton tire	Sum of PAH analy on liq extrct. of XAD-2 test & filter compnt. shred condition = 2" by 2" piece, burn rate=2.3 kg/hr, controlled	212
Naphthalene	91203		Scrap tire, open burning	Tires in experimental burn hut		1.798 lb/ton tire	VOST samples burn rate = 1.5 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Naphthalene	91203		Scrap tire, open burning	Tires in experimental burn hut		2.29 lb/ton tire	VOST samples burn rate = 2.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Naphthalene	91203		Scrap tire, open burning	Tires in experimental burn hut		0.691 lb/ton tire	VOST samples burn rate = 0.9 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Naphthalene	91203		Scrap tire, open burning	Tires in experimental burn hut		1.436 lb/ton tire	VOST samples burn rate = 1.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Naphthalene	91203		Scrap tire, open burning	Tires in experimental burn hut		2.990 lb/ton tire	VOST samples burn rate = 1.4 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Naphthalene	91203		Scrap tire, open burning	Tires in experimental burn hut		1.142 lb/ton tire	VOST samples burn rate = 0.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Naphthalene	91203		Scrap tire, open burning	Tires in experimental burn hut		3.447 lb/ton tire	VOST samples burn rate = 0.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Naphthalene	91203		Scrap tire, open burning	Tires in experimental burn hut		1.69 lb/ton tire	VOST samples burn rate = 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Naphthalene	91203		Scrap tire, open burning	Tires in experimental burn hut		3.03 lb/ton tire	VOST samples burn rate = 3.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Naphthalene	91203		Scrap tire, open burning	Tires in experimental burn hut		2.403 lb/ton tire	VOST samples burn rate = 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Naphthalene	91203		Scrap tire, open burning	Tires in experimental burn hut		1.20 lb/ton tire	VOST samples burn rate = 2.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Naphthalene	91203		Scrap tire, open burning	Tires in experimental burn hut		1.81 lb/ton tire	VOST samples burn rate = 4.43 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Naphthalene	91203		Waste oil combustion	Waste oil-fired boilers (<150 million Btu/h) or space heaters	1	0.18 lb/1000 gal oil burned	Uncontrolled, based on emissions data and engineering judgement, assumes 97% DRE	99
Naphthalene	91203	226	Woven fabric finishing	Curing oven - resin finish	330001	0.906 lb/ton fabric	Uncontrolled, average of three tests	92

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Naphthalene	91203	226	Woven fabric finishing	Tenter frames - resin finish	330001	0.0034 lb/ton fabric	Uncontrolled, average of two tests	52
Naphthalene	91203	226	Woven fabric finishing	Thermosol dyeing	330001	0.002 lb/ton fabric	Uncontrolled, average of two tests	52
Naphthalene	91203	2491	Wood preserving	Creosote conditioning	30700501	2.2 lbs/hr	Based on one sampling program at one facility	10
Naphthalene	91203	2491	Wood preserving	Creosote cool-down	307005	1.06 lbs/hr	Based on one sampling program at one facility	10
Naphthalene	91203	2491	Wood preserving	Creosote treating cylinder fugitives	307005	2.8 mg/scm3 gas leaked	One measurement	6
Naphthalene	91203	2491	Wood preserving	Incineration of waste	307005	290 ug/scm3 stack gas	Controlled with baghouse, average value	6
Naphthalene	91203	2491	Wood preserving	Penta treating cylinder fugitives	307005	2.6 mg/scm3 gas leaked	Average of 3 measurements	6
Naphthalene	91203	2491	Wood preserving	Pentachlorophenol conditioning	30700597	2.29 lbs/hr	Based on one sampling program at one facility	10
Naphthalene	91203	2491	Wood preserving	Pentachlorophenol cool-down	30700597	0.99 lbs/hr	Based on one sampling program at one facility	10
Naphthalene	91203	2491	Wood preserving	Pentachlorophenol treating - fugitive	30700597	0.24 lbs/hr	Based on one sampling program at one facility	10
Naphthalene	91203	2491	Wood preserving	Thermal (pan) evaporation of creosote wastewater		2900 mg/scm3 gas vented	Average value	6
Naphthalene	91203	2491	Wood preserving	Thermal (pan) evaporation of pentachlorophenol wastewater		2000 mg/scm3 gas vented	Average value	6
Naphthalene	91203	25	Wood combustion, industrial	Horizontal return tube	10200904	7.5 x 10E-8 lb/ton fuel (dry basis)	Results of GC/MS analysis of xad-2 resin extract	176
Naphthalene	91203	25	Wood combustion, industrial	Balanced draft wicket stoker-fired industrial boiler	10200904	2.0 x 10E-7 lb/ton fuel	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 tg/s, boil. eff. 59.3%	177
Naphthalene	91203	267	Paper coating	Coating line	40201301	9.6 x 10-7 lb/ft paper coated	Based on one sampling program, sampled at discharge of afterburner	11
Naphthalene	91203	28	Industrial wastewater treatment	Weir	301	0.23 x mass of pollutant in waste stream	Uncontrolled emissions	208
Naphthalene	91203	28	Industrial wastewater treatment	Oil-water separator	301	0.09 x mass of pollutant in waste stream	Uncontrolled emissions	208
Naphthalene	91203	28	Industrial wastewater treatment	Treatment tank	301	8.6 x 10E-02 x mass of pollutant in waste stream	Uncontrolled emissions	208

EMISSION FACTOR

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Naphthalene	91203	28	Industrial wastewater treatment	Non-aerated biobasin	301	0.12 x mass of pollutant in waste stream	Uncontrolled emissions	205
Naphthalene	91203	28	Industrial wastewater treatment	Aerated biobasin	301	0.17 x mass of pollutant in waste stream	Uncontrolled emissions	205
Naphthalene	91203	28	Industrial wastewater treatment	Clarifier	301	0.024 x mass of pollutant in waste stream	Uncontrolled emissions	205
Naphthalene	91203	28	Industrial wastewater treatment	Aerated equalization basin	301	0.99 x mass of pollutant in waste stream	Uncontrolled emissions	205
Naphthalene	91203	28	Industrial wastewater treatment	Non-aerated equalization basin	301	0.38 x mass of pollutant in waste stream	Uncontrolled emissions	205
Naphthalene	91203	28	Industrial wastewater treatment	Open trench	301	0.029 x mass of pollutant in waste stream	Uncontrolled emissions	205
Naphthalene	91203	28	Industrial wastewater treatment	Sump	301	4.7 x 10E-03 x mass of pollutant in waste stream	Uncontrolled emissions	205
Naphthalene	91203	28	Industrial wastewater treatment	Lift station	301	0.18 x mass of pollutant in waste stream	Uncontrolled emissions	205
Naphthalene	91203	28	Industrial wastewater treatment	Junction box	301	0.048 x mass of pollutant in waste stream	Uncontrolled emissions	205
Naphthalene	91203	28	Industrial wastewater treatment	Manhole	301	0.0015 x mass of pollutant in waste stream	Uncontrolled emissions	205
Naphthalene	91203	28	Industrial wastewater treatment	Drain	301	0.011 x mass of pollutant in waste stream	Uncontrolled emissions	205
Naphthalene	91203	2865	Acetone/phenol manufacture from cumene	Cumene peroxidation vent	30120202	0.0002 lb/ton phenol	Controlled (unspecified), based on test data, 1977 data, average factors	129
Naphthalene	91203	2865	Phthalic anhydride production - naphthalene process	Storage tank emissions	407036	1.2 lb/ton PA produced	Uncontrolled, test data and engineering judgement	130
Naphthalene	91203	2865	Phthalic anhydride production - naphthalene process	Storage tank emissions	407	0.012 lb/ton PA produced	Controlled, test data and engineering judgement	130
Naphthalene	91203	2869	Acetone/phenol manufacture from cumene	Cumene peroxidation vent	30109101	<0.0003 lb naphthalene/ton phenol produc	Controlled (adsorption or condensation), based on industry sources	19
Naphthalene	91203	2869	Propylene oxide production by chlorohydrination	Absorption	30120802	0.16 lb/ton produced	Control unclear, based on mass balance and testing	98

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Naphthalene	91203	2911	Petroleum refinery	Fluidized catalytic cracking unit, fugitives	306	0.33 lb/hr	Based on weighted emission stream content	92
Naphthalene	91203	3312	Coke production, by-product recovery process	Entire process	303003	0.01184 lb/ton coke	Estimated from capacity and wt. percent naphthalene (0.8)	99
Naphthalene	91203	3334	Primary aluminum production	Soderberg potline	303001	0.948 lb/ton Al produced	Single test report, one plant, controlled, baghouse	91
Naphthalene	91203	3334	Primary aluminum production	Soderberg potline	303001	0.124 lb/ton Al produced	Single test report, one plant, controlled, baghouse, material that escaped primary control system	91
Naphthalene	91203	4953	Wastewater treatment	POTW	50100701	320 lb/ton naphthalene in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
1,4-Naphthoquinone	130154	2865	Phthalic anhydride production - naphthalene process	Main process incinerator	301019	1.38 lb/ton PA produced	Uncontrolled, test data and engineering judgement	120
1,4-Naphthoquinone	130154	2865	Phthalic anhydride production - naphthalene process	Main process incinerator	301019	0.04 lb/ton PA produced	Controlled, test data and engineering judgement	120
1,4-Naphthoquinone	130154	2865	Phthalic anhydride production - naphthalene process	Secondary incinerator	301019	13.2 lb/ton PA produced	Uncontrolled, test data and engineering judgement	120
1,4-Naphthoquinone	130154	2865	Phthalic anhydride production - naphthalene process	Secondary incinerator	301019	0.14 lb/ton PA produced	Controlled (not specified), test data and engineering judgement	120
Nickel	7440020		Coal combustion	Anthracite coal-fired cyclone boilers, util/commerc/industr	1	303-2240 lb/10E12 Btu	Uncontrolled, based on engineering judgement	34
Nickel	7440020		Coal combustion	Anthracite coal-fired cyclone boilers, util/commerc/industr	1	153-1140 lb/10E12 Btu	Controlled with multiclone, based on engineering judgement	34
Nickel	7440020		Coal combustion	Anthracite coal-fired cyclone boilers, util/commerc/industr	1	82-610 lb/10E12 Btu	Controlled with ESP, based on engineering judgement	34
Nickel	7440020		Coal combustion	Anthracite coal-fired cyclone boilers, util/commerc/industr	1	11-81 lb/10E12 Btu	Controlled with scrubber, based on engineering judgement	34
Nickel	7440020		Coal combustion	Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	1790-2240 lb/10E12 Btu	Uncontrolled, based on engineering judgement	34

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Nickel	7440020		Coal combustion	Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	906-1140 lb/10E12 Btu	Controlled with multiclone, based on engineering judgement	34
Nickel	7440020		Coal combustion	Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	487-610 lb/10E12 Btu	Controlled with ESP, based on engineering judgement	34
Nickel	7440020		Coal combustion	Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	64-81 lb/10E12 Btu	Controlled with scrubber, based on engineering judgement	34
Nickel	7440020		Coal combustion	Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	1440-2240 lb/10E12 Btu	Uncontrolled, based on engineering judgement	34
Nickel	7440020		Coal combustion	Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	739-1140 lb/10E12 Btu	Controlled with multiclone, based on engineering judgement	34
Nickel	7440020		Coal combustion	Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	597-610 lb/10E12 Btu	Controlled with ESP, based on engineering judgement	34
Nickel	7440020		Coal combustion	Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	53-81 lb/10E12 Btu	Controlled with scrubber, based on engineering judgement	34
Nickel	7440020		Coal combustion	Anthracite coal-fired stoker boilers, util/commerc/industr	1	1350-2240 lb/10E12 Btu	Uncontrolled, based on engineering judgement	34
Nickel	7440020		Coal combustion	Anthracite coal-fired stoker boilers, util/commerc/industr	1	683-1140 lb/10E12 Btu	Controlled with multiclone, based on engineering judgement	34
Nickel	7440020		Coal combustion	Anthracite coal-fired stoker boilers, util/commerc/industr	1	367-610 lb/10E12 Btu	Controlled with ESP, based on engineering judgement	34
Nickel	7440020		Coal combustion	Bituminous coal-fired cyclone boiler, util/commerc/industr	1	174-1290 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Nickel	7440020		Coal combustion	Bituminous coal-fired cyclone boiler, util/commerc/industr	1	88-684 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Nickel	7440020		Coal combustion	Bituminous coal-fired cyclone boiler, util/commerc/industr	1	47-352 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Nickel	7440020		Coal combustion	Bituminous coal-fired cyclone boiler, util/commerc/industr	1	6.3-46 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Nickel	7440020		Coal combustion	Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	1030-1290 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Nickel	7440020		Coal combustion	Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	922-484 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Nickel	7440020		Coal combustion	Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	280-392 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Nickel	7440020		Coal combustion	Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	37-46 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Nickel	7440020		Coal combustion	Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	840-1290 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Nickel	7440020		Coal combustion	Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	425-654 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Nickel	7440020		Coal combustion	Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	220-392 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Nickel	7440020		Coal combustion	Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	30-46 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Nickel	7440020		Coal combustion	Bituminous coal-fired spreader stoker boilers, util/commerc/industr	1	775-1290 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Nickel	7440020		Coal combustion	Bituminous coal-fired spreader stoker boilers, util/commerc/industr	1	392-654 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Nickel	7440020		Coal combustion	Bituminous coal-fired spreader stoker boilers, util/commerc/industr	1	211-352 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Nickel	7440020		Coal combustion	Lignite coal-fired cyclone boilers, util/commerc/industr	1	187-1160 lb/10E12 Btu	Uncontrolled, based on engineering judgement	36

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Nickel	7440020		Coal combustion	Lignite coal-fired cyclone boilers, util/commerc/industr	1	79-587 lb/10E12 Btu	Controlled with multiclone, based on engineering judgement	36
Nickel	7440020		Coal combustion	Lignite coal-fired cyclone boilers, util/commerc/industr	1	43-316 lb/10E12 Btu	Controlled with ESP, based on engineering judgement	36
Nickel	7440020		Coal combustion	Lignite coal-fired cyclone boilers, util/commerc/industr	1	5.4-42 lb/10E12 Btu	Controlled with scrubber, based on engineering judgement	36
Nickel	7440020		Coal combustion	Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	920-1160 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Nickel	7440020		Coal combustion	Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	470-587 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Nickel	7440020		Coal combustion	Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	252-316 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Nickel	7440020		Coal combustion	Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	33-42 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Nickel	7440020		Coal combustion	Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	184-1160 lb/10E12 Btu	Uncontrolled, based on engineering judgement	36
Nickel	7440020		Coal combustion	Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	382-587 lb/10E12 Btu	Controlled with multiclone, based on engineering judgement	36
Nickel	7440020		Coal combustion	Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	205-316 lb/10E12 Btu	Controlled with ESP, based on engineering judgement	36
Nickel	7440020		Coal combustion	Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	27-42 lb/10E12 Btu	Controlled with scrubber, based on engineering judgement	36

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Nickel	7440020		Coal combustion	Lignite coal-fired spreader stoker boilers, util/comberc/industr	1	696-1140 lb/10E12 Btu	Uncontrolled, based on engineering judgement	34
Nickel	7440020		Co.. combustion	Lignite coal-fired spreader stoker boilers, util/comberc/industr	1	352-587 lb/10E12 Btu	Controlled with multiclone, based on engineering judgement	34
Nickel	7440020		Coal combustion	Lignite coal-fired spreader stoker boilers, util/comberc/industr	1	189-314 lb/10E12 Btu	Controlled with ESP, based on engineering judgement	34
Nickel	7440020		Coal combustion, residential	Anthracite coal-fired boilers		224 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	34
Nickel	7440020		Coal combustion, residential	Bituminous coal-fired boilers		129 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	34
Nickel	7440020		Coal combustion, residential	Boilers fired by coal from appalachian region		133 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Nickel	7440020		Coal combustion, residential	Boilers fired by coal from interior region		244 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Nickel	7440020		Coal combustion, residential	Boilers fired by coal from northern plains region		107 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Nickel	7440020		Coal combustion, residential	Boilers fired by coal from rocky mountain region		90.6 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Nickel	7440020		Coal combustion, residential	Lignite coal-fired boilers		114 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	34
Nickel	7440020		Coal combustion, residential	Subbituminous coal-fired boilers		73.5 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	34
Nickel	7440020		Oil combustion	Distillate oil-fired boiler, util/comberc/industr/residential	1	170 lb/10E12 Btu	Uncontrolled, based on engineering judgement	34
Nickel	7440020		Oil combustion	Distillate oil-fired boiler, util/comberc/industr/residential	1	86.7 lb/10E12 Btu	Controlled by multiclone, based on engineering judgement	34
Nickel	7440020		Oil combustion	Distillate oil-fired boiler, util/comberc/industr/residential	1	47.6 lb/10E12 Btu	Controlled by ESP, based on engineering judgement	34

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Nickel	7440020		Oil combustion	Distillate oil-fired boiler, util/commerc/industr/residential	1	4.8 lb/10E12 Btu	Controlled by scrubber, based on engineering judgement	36
Nickel	7440020		Oil combustion	Residual oil-fired boiler, util/commerc/industr/residential	1	1260 lb/10E12 Btu	Uncontrolled, based on engineering judgement	36
Nickel	7440020		Oil combustion	Residual oil-fired boiler, util/commerc/industr/residential	1	442.6 lb/10E12 Btu	Controlled by multiclone, based on engineering judgement	36
Nickel	7440020		Oil combustion	Residual oil-fired boiler, util/commerc/industr/residential	1	352.8 lb/10E12 Btu	Controlled by ESP, based on engineering judgement	36
Nickel	7440020		Oil combustion	Residual oil-fired boiler, util/commerc/industr/residential	1	50.4 lb/10E12 Btu	Controlled by scrubber, based on engineering judgement	36
Nickel	7440020		Waste oil combustion	Waste crankcase oil	1	0.07 lb Ni oxides/1000 gal waste oil	Control status unclear, based on source tests	144
Nickel	7440020		Wood combustion, residential	Woodstove without baffle		0.0034 lb/ton wood burned	Uncontrolled, based on one study, nonbaffled stove burning green pine	98
Nickel	7440020	1499	Asbestos milling	Milling dusts	305032	0.000018 lb/ton total asbestos produced	Controlled by fabric filter, based on analysis of one mill	110
Nickel	7440020	226	Woven fabric finishing	Heat setting	330001	1.24 x 10E-5 lb/ton fabric	Uncontrolled, based on test data	92
Nickel	7440020	226	Woven fabric finishing	Tenter frames - resin finishing	330001	8.2 x 10E-4 lb/ton fabric	Uncontrolled, average of four tests	92
Nickel	7440020	226	Woven fabric finishing	Thermosol dyeing	330001	1.82 x 10E-4 lb/ton fabric	Uncontrolled, average of two tests	92
Nickel	7440020	25	Wood combustion, industrial	Horizontal return tube	10200904	255.09 lb/10E12 Btu heat input	Sample results, 1 plant, wood flowrate = .514 kg/s, boiler has 3-pass design w/flyash reinjection, uncontrolled	176
Nickel	7440020	25	Wood combustion, industrial	Balanced draft wickes stoker-fired industrial boiler	10200904	0.0052 lb/ton fuel or 347 lb/10E12 Btu	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 kg/s, boil. eff. 55.3%	177

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POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Nickel	7440020	25	Wood combustion, industrial	Balanced draft wicket stoker-fired industrial boiler	10200904	0.0044 lb/ton fuel or 556 lb/10E12 Btu	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.54 kg/s, boil. eff. 61.3%	177
Nickel	7440020	2951	Asphaltic concrete production	Plant stack	305002	1.48 x 10E-10 lb/ton concrete	Controlled (unspecified) from a single plant, avg. of 2 values, range is 1.44 x 10E-10 - 1.51 x 10E-10 lb/ton	170
Nickel	7440020	2951	Asphaltic concrete production	Plant stack	305002	7.7 x 10E-10 lb/ton concrete	Uncontrolled from a single plant, avg. of 2 values, range is 6.4 x 10E-10 - 8.8 x 10E-10 lb/ton	170
Nickel	7440020	3241	Cement manufacture - dry process	Air separator after finish grinding mill	305006	6 x 10E-6 lb/ton raw mater. feed input	Controlled by fabric filter, based on source tests	110
Nickel	7440020	3241	Cement manufacture - dry process	Air separator after initial grinding mill	305006	1 x 10E-6 lb/ton raw mater. feed input	Controlled by fabric filter, based on source tests	110
Nickel	7440020	3241	Cement manufacture - dry process	Feed to finish grinding mill	305006	1 x 10E-5 lb/ton raw mater. feed input	Controlled by fabric filter, based on source tests	110
Nickel	7440020	3241	Cement manufacture - dry process	Feed to initial grinding mill	305006	1 x 10E-5 lb/ton raw mater. feed input	Controlled by fabric filter, based on source tests	110
Nickel	7440020	3241	Cement manufacture - dry process	Kiln	30500606	3 x 10E-4 lb/ton raw mater. feed input	Controlled by fabric filter, based on source tests	110
Nickel	7440020	3241	Cement manufacture - dry process	Raw material grinding mills	30500613	6 x 10E-7 lb/ton raw mater. feed input	Controlled by fabric filter, based on source tests	110
Nickel	7440020	3241	Cement manufacture - wet process	Clinker cooler	30500714	4 x 10E-6 lb/ton raw mater. feed input	Controlled by fabric filter, based on source tests	110
Nickel	7440020	3241	Cement manufacture - wet process	Clinker cooler	30500714	1 x 10E-4 lb/ton raw mater. feed input	Controlled by ESP, based on source tests	110
Nickel	7440020	3241	Cement manufacture - wet process	Clinker cooler	30500714	2 x 10E-4 lb/ton raw mater. feed input	Controlled by two fabric filters in parallel, based on source tests	110
Nickel	7440020	3241	Cement manufacture - wet process	Finishing grinding mill after air separator	30500717	4 x 10E-6 lb/ton raw mater. feed input	Controlled by fabric filter, based on source tests	110
Nickel	7440020	3241	Cement manufacture - wet process	Kiln	30500706	0.0002-0.002 lb/ton raw mater. feed	Controlled by fabric filter, based on source tests	110
Nickel	7440020	3312	Coke production	Coke oven	303003	0.0016 lb/ton of coal processed	Uncontrolled, basis unclear	110
Nickel	7440020	3312	Steel production	Argon oxygen decarburization vessel (stainless steel)	30300998	0.32 lb/ton of steel produced	Uncontrolled, calculated based on source tests	110
Nickel	7440020	3312	Steel production	Argon oxygen decarburization vessel (stainless steel)	30300998	0.044 lb/ton of steel produced	Controlled with fabric filter, calculated based on source tests	110

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Nickel	7440020	3312	Steel production	Basic oxygen process, fugitives	303009	0.0001 lb/ton of steel produced	Uncontrolled, calculated based on source tests	110
Nickel	7440020	3312	Steel production	Basic oxygen process, furnace	30300913	0.000018 lb/ton of steel produced	Controlled by scrubber, calculated based on source tests	110
Nickel	7440020	3312	Steel production	Electric arc furnace (alloy steel)	30300904	0.025 lb/ton of steel produced	Uncontrolled, calculated based on source tests	110
Nickel	7440020	3312	Steel production	Electric arc furnace (alloy steel)	30300904	0.000039-0.00025 lb/ton steel produced	Controlled with fabric filter, calculated based on source tests	110
Nickel	7440020	3312	Steel production	Electric arc furnace (carbon steel)	30300908	0.0083 lb/ton of steel produced	Uncontrolled, calculated based on source tests	110
Nickel	7440020	3312	Steel production	Electric arc furnace (carbon steel)	30300908	0.000013-0.000084 lb/ton steel produced	Controlled by fabric filter, calculated based on source tests	110
Nickel	7440020	3312	Steel production	Electric arc furnace (stainless steel)	30300998	0.3 lb/ton of steel produced	Uncontrolled, calculated based on source tests	110
Nickel	7440020	3312	Steel production	Electric arc furnace (stainless steel)	30300998	0.003 lb/ton of steel produced	Controlled with fabric filter, calculated based on source tests	110
Nickel	7440020	3312	Steel production	Electric arc furnace fugitive emissions (alloy steel)	303009	0.0014 lb/ton of steel produced	Uncontrolled, calculated based on source tests	110
Nickel	7440020	3312	Steel production	Electric arc furnace fugitive emissions (alloy steel)	303009	0.00032 lb/ton of steel produced	Controlled with hoods and fabric filter, calculated based on source tests	110
Nickel	7440020	3312	Steel production	Electric arc furnace fugitive emissions (carbon steel)	303009	0.00054 lb/ton of steel produced	Uncontrolled, calculated based on source tests	110
Nickel	7440020	3312	Steel production	Electric arc furnace fugitive emissions (carbon steel)	303009	0.00011 lb/ton of steel produced	Controlled with hoods and fabric filter, calculated based on source tests	110
Nickel	7440020	3312	Steel production	Electric arc furnace fugitive emissions (stainless steel)	30300998	0.036 lb/ton of steel produced	Uncontrolled, calculated based on source tests	110
Nickel	7440020	3312	Steel production	Electric arc furnace fugitive emissions (stainless steel)	30300998	0.0072 lb/ton of steel produced	Controlled with hoods and fabric filter, calculated based on source tests	110
Nickel	7440020	3312	Steel production	Open hearth fugitive emissions	303009	0.00008 lb/ton of steel produced	Uncontrolled, calculated based on source tests	110

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Nickel	7440020	25	Wood combustion, industrial	Balanced draft wicket stoker-fired industrial boiler	10200904	0.0044 lb/ton fuel or 854 lb/10E12 Btu	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.54 kg/s, boil. eff. 61.3%	177
Nickel	7440020	2951	Asphaltic concrete production	Plant stack	305002	1.48 x 10E-10 lb/ton concrete	Controlled (unspecified) from a single plant, avg. of 2 values, range is 1.44 x 10E-10 - 1.51 x 10E-10 lb/ton	170
Nickel	7440020	2951	Asphaltic concrete production	Plant stack	305002	7.7 x 10E-10 lb/ton concrete	Uncontrolled from a single plant, avg. of 2 values, range is 6.6 x 10E-10 - 8.8 x 10E-10 lb/ton	170
Nickel	7440020	3241	Cement manufacture - dry process	Air separator after finish grinding mill	305006	6 x 10E-6 lb/ton raw mater. feed input	Controlled by fabric filter, based on source tests	110
Nickel	7440020	3241	Cement manufacture - dry process	Air separator after initial grinding mill	305006	1 x 10E-6 lb/ton raw mater. feed input	Controlled by fabric filter, based on source tests	110
Nickel	7440020	3241	Cement manufacture - dry process	Feed to finish grinding mill	305006	1 x 10E-5 lb/ton raw mater. feed input	Controlled by fabric filter, based on source tests	110
Nickel	7440020	3241	Cement manufacture - dry process	Feed to initial grinding mill	305006	1 x 10E-5 lb/ton raw mater. feed input	Controlled by fabric filter, based on source tests	110
Nickel	7440020	3241	Cement manufacture - dry process	Kiln	30500606	3 x 10E-4 lb/ton raw mater. feed input	Controlled by fabric filter, based on source tests	110
Nickel	7440020	3241	Cement manufacture - dry process	[illegible]terial grinding	30500613	6 x 10E-7 lb/ton raw mater. feed input	Controlled by fabric filter, based on source tests	110
Nickel	7440020	3241	Cement manufactu process	[illegible]	30500714	4 x 10E-6 lb/ton raw mater. feed input	Controlled by fabric filter, based on source tests	110
Nickel	7440020	3241	Cement m process	[illegible]	30500714	1 x 10E-4 lb/ton raw mater. feed input	Controlled by ESP, based on source tests	110
Nickel	7440020	3241	Cement process	[illegible]	30500714	2 x 10E-4 lb/ton raw mater. feed input	Controlled by two fabric filters in parallel, based on source tests	110
Nickel	7440020	3241	Cement manufac process	[illegible]	00717	4 x 10E-6 lb/ton raw mater. feed input	Controlled by fabric filter, based on source tests	110
Nickel	7440020	3241	Cement manufacture - process	[illegible]	30500706	0.0002-0.002 lb/ton raw mater. feed	Controlled by fabric filter, based on source tests	110
Nickel	7440020	3312	Coke production	C[illegible]	303003	0.0016 lb/ton of coal processed	Uncontrolled, basis unclear	110
Nickel	7440020	3312	Steel production	Argon oxygen decarburization vessel (stainless steel)	30300998	0.32 lb/ton of steel produced	Uncontrolled, calculated based on source tests	110
Nickel	7440020	3312	Steel production	Argon oxygen decarburization vessel (stainless steel)	30300998	0.064 lb/ton of steel produced	Controlled with fabric filter, calculated based on source tests	110

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Nickel	7440020	3312	Steel production	Basic oxygen process, fugitives	303009	0.0001 lb/ton of steel produced	Uncontrolled, calculated based on source tests	110
Nickel	7440020	3312	Steel production	Basic oxygen process, furnace	30300913	0.000018 lb/ton of steel produced	Controlled by scrubber, calculated based on source tests	110
Nickel	7440020	3312	Steel production	Electric arc furnace (alloy steel)	30300904	0.025 lb/ton of steel produced	Uncontrolled, calculated based on source tests	110
Nickel	7440020	3312	Steel production	Electric arc furnace (alloy steel)	30300904	0.000039-0.00025 lb/ton steel produced	Controlled with fabric filter, calculated based on source tests	110
Nickel	7440020	3312	Steel production	Electric arc furnace (carbon steel)	30300908	0.0083 lb/ton of steel produced	Uncontrolled, calculated based on source tests	110
Nickel	7440020	3312	Steel production	Electric arc furnace (carbon steel)	30300908	0.000013-0.000084 lb/ton steel produced	Controlled by fabric filter, calculated based on source tests	110
Nickel	7440020	3312	Steel production	Electric arc furnace (stainless steel)	30300998	0.3 lb/ton of steel produced	Uncontrolled, calculated based on source tests	110
Nickel	7440020	3312	Steel production	Electric arc furnace (stainless steel)	30300998	0.003 lb/ton of steel produced	Controlled with fabric filter, calculated based on source tests	110
Nickel	7440020	3312	Steel production	Electric arc furnace fugitive emissions (alloy steel)	303009	0.0014 lb/ton of steel produced	Uncontrolled, calculated based on source tests	110
Nickel	7440020	3312	Steel production	Electric arc furnace fugitive emissions (alloy steel)	303009	0.00032 lb/ton of steel produced	Controlled with hoods and fabric filter, calculated based on source tests	110
Nickel	7440020	3312	Steel production	Electric arc furnace fugitive emissions (carbon steel)	303009	0.00054 lb/ton of steel produced	Uncontrolled, calculated based on source tests	110
Nickel	7440020	3312	Steel production	Electric arc furnace fugitive emissions (carbon steel)	303009	0.00011 lb/ton of steel produced	Controlled with hoods and fabric filter, calculated based on source tests	110
Nickel	7440020	3312	Steel production	Electric arc furnace fugitive emissions (stainless steel)	30300998	0.036 lb/ton of steel produced	Uncontrolled, calculated based on source tests	110
Nickel	7440020	3312	Steel production	Electric arc furnace fugitive emissions (stainless steel)	30300998	0.0072 lb/ton of steel produced	Controlled with hoods and fabric filter, calculated based on source tests	110
Nickel	7440020	3312	Steel production	Open hearth fugitive emissions	303009	0.00005 lb/ton of steel produced	Uncontrolled, calculated based on source tests	110

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Nickel	7440020	3312	Steel production	Open hearth furnace	30300901	0.00018 lb/ton of steel produced	Controlled by ESP, calculated based on source tests	110
Nickel	7440020	3312	Steel production	Argon oxygen decarburization vessel (stainless steel)	303009	0.38 lbs/ton steel	Uncontrolled emissions	198
Nickel	7440020	3312	Steel production	Electric arc furnace/AOD vessel streams combined	303009	0.25 lbs/ton steel	Uncontrolled emissions	198
Nickel	7440020	3313	Ferroalloy production	Electric arc furnace, semi-sealed, ferrosilicon	30300702	3.8 mg/mw-hr energy consumed by furnace	Uncontrolled	169
Nickel	7440020	3313	Ferroalloy production	Electric arc furnace, open, ferromanganese	30300701	1,000 mg/mw-hr energy consumed by furnace	Uncontrolled	169
Nickel	7440020	3339	Primary nickel ore smelting	Calciners	303	0.46 lb/ton of nickel produced	Controlled by ESP, based on source tests	110
Nickel	7440020	3339	Primary nickel ore smelting	Crusher house	303	0.012-0.092 lb/ton of nickel produced	Controlled by fabric filter, based on source tests	110
Nickel	7440020	3339	Primary nickel ore smelting	Ore melter/roaster combination	303	0.054-0.092 lb/ton of nickel produced	Controlled by fabric filters, based on source tests	110
Nickel	7440020	3339	Primary nickel ore smelting	Refining furnace	303	0.013 lb/ton of nickel produced	Controlled by fabric filters, based on engineering estimates	110
Nickel	7440020	3339	Primary nickel ore smelting	Rotary dryer	303	0.042-0.56 lb/ton of nickel produced	Controlled by cyclone/scrubber, based on source tests	110
Nickel	7440020	3339	Primary nickel ore smelting	Skip hoists	303	0.027-0.067 lb/ton of nickel produced	Controlled by fabric filters, based on source tests	110
Nickel	7440020	3339	Primary nickel ore smelting	Yay bin	303	0.00065-0.0019 lb/ton nickel produced	Controlled by fabric filter, based on source tests	110
Nickel	7440020	3341	Nonferrous metals production	Melt furnace at electrical alloy facility	304	2 lb/ton of nickel charged	Controlled by fabric filter, based on engineering judgement	110
Nickel	7440020	3341	Nonferrous metals production	Melt furnace at nickel-copper or copper-nickel facility	304	2 lb/ton of nickel charged	Controlled by fabric filter, based on engineering judgement	110
Nickel	7440020	3341	Nonferrous metals production	Melt furnace at other nonferrous alloy facility	304	2 lb/ton of nickel charged	Controlled by fabric filter, based on engineering judgement	110
Nickel	7440020	3341	Nonferrous metals production	Melt furnace at permanent magnet alloy facility	304	2 lb/ton of nickel charged	Controlled by fabric filter, based on engineering judgement	110
Nickel	7440020	3341	Nonferrous metals production	Melt furnace at superalloy facility	304	2 lb/ton of nickel charged	Controlled by fabric filter, based on engineering judgement	110

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Nickel	7440020	3341	Secondary processing of nickel-bearing scrap	Cast iron scrap melting furnaces	304010	20 lb/ton of nickel charged	Uncontrolled, based on engineering judgement	110
Nickel	7440020	3341	Secondary processing of nickel-bearing scrap	Copper base alloy scrap melting furnaces	304010	2 lb/ton of nickel charged	Controlled, based on engineering judgement	110
Nickel	7440020	3341	Secondary processing of nickel-bearing scrap	Electrical alloy scrap melting furnaces	304010	2 lb/ton of nickel charged	Controlled, based on engineering judgement	110
Nickel	7440020	3341	Secondary processing of nickel-bearing scrap	Iron and steel scrap melting furnace	304010	0.0015 lb/ton of iron and steel produced	Controlled, based on material balance	110
Nickel	7440020	3341	Secondary processing of nickel-bearing scrap	Nickel alloy steel scrap melting furnace	304010	10 lb/ton of nickel charged	Controlled, based on material balance	110
Nickel	7440020	3341	Secondary processing of nickel-bearing scrap	Other nickel alloy scrap melting furnace	304010	2 lb/ton of nickel charged	Controlled, based on engineering judgement	110
Nickel	7440020	3341	Secondary processing of nickel-bearing scrap	Stainless steel scrap melting furnace	304010	10 lb/ton of nickel charged	Controlled, based on questionnaire survey results	110
Nickel	7440020	3341	Secondary processing of nickel-bearing scrap	Stainless steel scrap melting furnace	304010	0.6 lb/ton of steel produced	Controlled, based on questionnaire survey results	110
Nickel	7440020	3471	Nickel electro-deposition	Entire process		4.95 x 10E-7 lb/hr/amp	Value is for striking, can be used for plating, measured factor	92
Nickel	7440020	3691	Battery (nickel-cadmium) manufacture	Total plant emissions	304	8.8 lb/ton of nickel processed	Uncontrolled, based on industry responses to questionnaire survey	110
Nickel	7440020	4911	Cooling towers, utility	Fresh water cooling towers with drift loss range of 0.002 to 0.005%	1	0.788 lb/10E12 Btu heat input to power plant	Uncontrolled, based on source tests	110
Nickel	7440020	4911	Cooling towers, utility	Fresh water cooling towers with drift loss range of 0.1 to 0.2%	1	37.10 lb/10E12 Btu heat input to power plant	Uncontrolled, based on source tests	110
Nickel	7440020	4953	Municipal waste combustion	Incinerator burning refuse and sludge	501001	0.005 lb/ton of solid waste incinerated	Controlled by wet scrubber, calculated based on source test	110
Nickel	7440020	4953	Municipal waste combustion	Incinerator burning refuse only	501001	0.003 lb/ton of solid waste incinerated	Controlled by wet scrubber, calculated based on source tests	110
Nickel	7440020	4953	Municipal waste combustion	Incinerator stack	501001	0.002 lb/ton munic. solid waste-dry wt.	Controlled by spray-baffle scrubber, based on material balance for model incinerator	98
Nickel	7440020	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	0.0122 lb/ton RDF combusted	100% RDF fuel only, ESP control only, overall average of several source averages, range is 0.00064 - 0.036 lb/ton	180

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Nickel	7440020	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	0.0056 lb/ton RDF combusted	100% RDF fuel only, uncontrolled, one data point only	180
Nickel	7440020	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	0.0052 lb/ton RDF combusted	Spray drying after acid gas and PM control, one data point only, 100% RDF fuel only	180
Nickel	7440020	4953	Municipal waste combustion	Modular starved-air combustor	501001	0.00022 lb/ton feed	ESP control only, overall average of several source averages, range is 1.7 x 10E-5 - 0.00044 lb/ton	180
Nickel	7440020	4953	Municipal waste combustion	Modular starved-air combustor	501001	0.0030 lb/ton feed	Uncontrolled, overall average of several source averages, range is 6.2 x 10E-5 - 0.0078 lb/ton	180
Nickel	7440020	4953	Municipal waste combustion	Modular excess-air combustor	501001	0.0050 lb/ton feed	ESP control only, one data point only	180
Nickel	7440020	4953	Municipal waste combustion	Modular excess-air combustor	501001	2 x 10E-9 lb/ton feed	Dry sorbent injection after acid gas and PM control, one data point only	180
Nickel	7440020	4953	Municipal waste combustion	Mass burn, water wall incinerator	501001	0.00034 lb/ton feed	Uncontrolled, one data point only	180
Nickel	7440020	4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	1.88 x 10E-9 lb/ton feed	Capacity > 400 tons/day, ESP control only, one data point only	180
Nickel	7440020	4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	0.00017 lb/ton feed	Capacity > 400 tons/day, spray drying after acid gas and PM control, overall avg. of several source avgs., range is 0.00013 - 0.00022 lb/ton	180
Nickel	7440020	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	9.4 x 10E-9 lb/ton feed	Capacity < 400 tons/day, uncontrolled, one data point only	180
Nickel	7440020	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	6.8 x 10E-9 lb/ton feed	Capacity < 400 tons/day, ESP control only, overall average of several source averages, range is 4.4 x 10E-9 - 8.0 x 10E-9 lb/ton	180
Nickel	7440020	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	0.00192 lb/ton feed	Cap. < 400 tons/day, spray drying after acid gas and PM control, overall avg. of several source avgs., range is 2.8 x 10E-5 - 0.0036 lb/ton	180
Nickel	7440020	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	1.4 x 10E-6 lb/ton feed	Capacity < 400 tons/day, dry sorbent injection after acid gas and PM control, one data point only	180
Nickel	7440020	4953	Municipal waste combustion	Mass burn waterwall combustor, built before 1980	501001	2,200 lb/ton feed	ESP control only, one data point only	180
Nickel	7440020	4953	Municipal waste combustion	Mass burn waterwall combustor, built before 1980	501001	0.020 lb/ton feed	Uncontrolled, one data point only	180

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Nickel	7440020	4953	Municipal waste combustion	Mass burn, refractory facility	501001	0.0015 lb/ton feed	Spray drying after acid gas and PM control, one data point only	180
Nickel	7440020	4953	Municipal waste combustion	Mass burn, refractory facility	501001	0.014 lb/ton feed	Uncontrolled, one data point only	180
Nickel	7440020	4953	Sewage sludge incineration	Fluidized bed	50100504	0.0003 lb/ton of solid waste incinerated	Controlled by wet scrubber, calculated based on source tests	110, 203
Nickel	7440020	4953	Sewage sludge incineration	Fluidized bed	50100504	0.15 lb/ton of solid waste incinerated	Uncontrolled, calculated based on source tests	110
Nickel	7440020	4953	Sewage sludge incineration	Fluidized-bed furnace	50100504	0.04 lb/ton dry sludge	Average of three tests, scrubber (range 0.0082 - 0.156)	101
Nickel	7440020	4953	Sewage sludge incineration	Multiple hearth furnace	50100504	0.0032 lb/ton dry sludge	Average of 10 tests, scrubber	101
Nickel	7440020	4953	Sewage sludge incineration	Multiple hearth incinerator	50100504	0.003 lb/ton of solid waste incinerated	Controlled by wet scrubber, calculated based on source tests	110
Nickel	7440020	4953	Sewage sludge incineration	Multiple hearth incinerator	50100504	0.15 lb/ton of solid waste incinerated	Uncontrolled, calculated based on source tests	110
Nickel	7440020	4953	Sewage sludge incineration	Fluidized-bed furnace	501	0.011 lbs/ton dry sludge	Uncontrolled emissions, single test	203
Nickel	7440020	4953	Sewage sludge incineration	Multiple hearth furnace	501	0.117 lbs/ton dry sludge	Uncontrolled emissions, range of 9 tests was 0.002 - 0.33 lbs/ton	203
Nickel	7440020	4953	Sewage sludge incineration	Multiple hearth furnace	501	0.004 lbs/ton dry sludge	Controlled by wet scrubber, range of 6 tests was 0.0002 - 0.0082 lbs/ton	203
Nickel	7440020	806	Hospital waste incineration	Incinerator	50200505	2.53 x 10E-4 lb/ton	Uncontrolled, test data	147
Nickel(II) oxide (1:1)	1313991	3312	Steel production	Electric arc furnace - melting/refining	30300908	0 - 0.12 lbs/ton carbon steel	Uncontrolled emissions	190
Nickel(II) oxide (1:1)	1313991	3312	Steel production	Electric arc furnace - charge and tap cycle	30300908	0 - 0.004 lbs/ton carbon steel	Uncontrolled emissions	190
Nickel(II) oxide (1:1)	1313991	3312	Steel production	AOD vessel - melt and refine cycle	303009	0.496 lbs/ton specialty steel	Uncontrolled emissions	190
Nickel(II) oxide (1:1)	1313991	332	Iron foundries	Electric arc furnace - charge and tap cycle	30400304	0.014-0.042 lbs/ton of iron produced	Uncontrolled emissions	184
Nickel(II) oxide (1:1)	1313991	332	Iron foundries	Electric arc furnace - charge and tap cycle	30400304	0.14-0.42 lbs/ton of iron produced	Uncontrolled emissions	184

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Nitrobenzene	98953	28	Solvent application	General emissions	401	2000 lb/ton used	Assume all is eventually lost to atmosphere	13
Nitrobenzene	98953	2865	Nitrobenzene and aniline production	Fugitive emissions	30119580	0.62 lb/ton produced	Based on site visit data	13
Nitrobenzene	98953	2865	Nitrobenzene and aniline production	General emissions	30119501	0.016 lb/ton produced	Based on site visit data	13
Nitrobenzene	98953	2865	Nitrobenzene and aniline production	Storage	407080	0.012 lb/ton produced	Based on site visit data	13
Nitrobenzene	98953	2869	Dichloroaniline production	General emissions	301	3.0 lb/ton used	Based on engineering estimate	13
Nitrobenzene	98953	2869	Dinitrobenzene production	General emissions	301	3 lb/ton used	Based on engineering estimate	13
Nitrobenzene	98953	2869	Nitrobenzene use as a chemical intermediate	Fugitive emissions	301	0.4 lb/ton used	Based on engineering estimate	13
Nitrobenzene	98953	2869	Nitrobenzene use as a chemical intermediate	General emissions	301	2.10 lb/ton used	Based on engineering estimate	13
Nitrobenzene	98953	2869	Nitrobenzene use as a chemical intermediate	Storage	407080	0.3 lb/ton used	Based on engineering estimate	13
Nitrobenzene	98953	4953	Wastewater treatment	POTW	50100701	40 lb/ton nitrobenzene in influent	Based on calc. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	60
2-Nitrophenol	88755	4953	Sewage sludge incineration	Fluidized-bed furnace	50100504	<0.000132 lb/ton dry sludge	One test, scrubber	101
2-Nitrophenol	88755	4953	Sewage sludge incineration	Multiple hearth furnace	50100504	0.007442 lb/ton dry sludge	One test, scrubber	101
4-Nitrophenol	100027	4953	Sewage sludge incineration	Fluidized-bed furnace	50100504	<7.13 x 10E-4 lb/ton dry sludge	One test, scrubber	101
4-Nitrophenol	100027	4953	Sewage sludge incineration	Multiple hearth furnace	50100504	<0.000428 lb/ton dry sludge	One test, scrubber	101
Octachlorodibenzofurans, total		26	Pulp/paper mill, kraft paper recovery boilers	Stack	307001	0.07 - 0.13 ng/dscm @ 3% O2	Three locations tested	119
Octachlorodibenzofurans, total		3341	Secondary copper smelting	Stack	304002	7200 ng/dscm @ 3% O2	Estimated value from stack test results	119
Octachlorodibenzofurans, total		49	Drum and barrel furnace	Stack	5	0.98 ng/dscm @ 3% O2	Tier 4 stack test sampling	119
Octachlorodibenzofurans, total		49	Industrial carbon regeneration	Stack		0.84 ng/dscm @ 3% O2	Tier 4 stack testing	119

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Octachlorodibenzofurans, total		49	Sewage sludge incineration	Stack	5	0.07 - 45 ng/dscm @ 3% O2	Three locations tested	115
Octachlorodibenzofurans, total		49	Wire reclamation incineration	Stack	5	230 ng/dscm @ 3% O2	Estimated value from stack test results	115
Octachlorodibenzofurans, total		49	Wood combustion	Stack, industrial wood-fired boiler	102009	0.92 ng/dscm @ 3% O2	Salt-laden wood, Tier 4 stack testing	115
Octachlorodibenzofurans, total		4953	Municipal waste combustion	Mass burn, water wall incinerator	5	0.706 - 197 ng/Nm3 @ 12% CO2	n = 10, 6 locations, controlled with an ESP	110
Octachlorodibenzofurans, total		4953	Municipal waste combustion	Mass burn, water wall incinerator	5	3.2 x 10E-9 - 1.072 x 10E-6 lb/ton feed	n = 6, 4 locations, controlled with an ESP	110
Octachlorodibenzofurans, total		806	Hospital waste incineration	Incinerator	50200505	2.21 x 10E-6 lb/ton feed	Uncontrolled, test data	167
Octachlorodibenzo-p-dioxins, total		26	Pulp/paper mill, kraft paper recovery boilers	Stack	307001	0.49 - 1.4 ng/dscm @ 3% O2	Three locations tested	115
Octachlorodibenzo-p-dioxins, total		3341	Secondary copper smelting	Stack	304002	3700 ng/dscm @ 3% O2	Estimated value from stack test results	115
Octachlorodibenzo-p-dioxins, total		49	Drum and barrel furnace	Stack	5	0.92 ng/dscm @ 3% O2	Tier 4 stack test sampling	115
Octachlorodibenzo-p-dioxins, total		49	Industrial carbon regeneration	Stack		0.81 ng/dscm @ 3% O2	Tier 4 stack testing	115
Octachlorodibenzo-p-dioxins, total		49	Sewage sludge incineration	Stack	5	0.98 - 15 ng/dscm @ 3% O2	Three locations tested	115
Octachlorodibenzo-p-dioxins, total		49	Wire reclamation incineration	Stack	5	290 ng/dscm @ 3% O2	Estimated value from stack test results	115
Octachlorodibenzo-p-dioxins, total		49	Wood combustion	Stack, industrial wood-fired boiler	102009	11 ng/dscm @ 3% O2	Salt-laden wood, Tier 4 stack testing	115
Octachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	Mass burn, water wall incinerator	5	3.39 - 809 ng/m3 @ 12% CO2	n = 10, 6 locations, controlled with an ESP	110
Octachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	Mass burn, water wall incinerator	5	2.56 x 10E-8 - 3.86 x 10E-6 lb/ton feed	n = 6, 4 locations, controlled with an ESP	110
Octachlorodibenzo-p-dioxins, total		806	Hospital waste incineration	Incinerator	50200609	2.28 x 10E-6 lb/ton feed	Uncontrolled, test data	167
1,2,3,7,8-Pentachlorodibenzofuran		4953	Municipal waste combustion	Mass burn, water wall incinerator	5	0.56 - 11 ng/Nm3 @ 12% CO2	n = 6, 4 locations, controlled with an ESP	110

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
2,3,4,7,8-Pentachlorodibenzofuran	57117314	4953	Municipal waste combustion	Mass burn, water wall incinerator	5	1.14 - 10.4 ng/Nm3 @ 12% CO2	n = 6, 4 locations, controlled with an ESP	118
Pentachlorodibenzofurans, total		26	Pulp/paper mill, kraft paper recovery boilers	Stack	307001	Not detectable - 0.46 ng/dscm @ 3% O2	Three locations tested, detection limit <0.1 ng/dscm @ 3% O2	115
Pentachlorodibenzofurans, total		3341	Secondary copper smelting	Stack	304002	19,000 ng/dscm @ 3% O2	Estimated value from stack test results	115
Pentachlorodibenzofurans, total		49	Drum and barrel furnace	Stack	5	6.2 ng/dscm @ 3% O2	Tier 4 stack test sampling	115
Pentachlorodibenzofurans, total		49	Industrial carbon regeneration	Stack		0.37 ng/dscm @ 3% O2	Tier 4 stack testing	115
Pentachlorodibenzofurans, total		49	Sewage sludge incineration	Stack	5	4.8 - 110 ng/dscm @ 3% O2	Three locations tested, does not include 2,3,7,8-isomer	115
Pentachlorodibenzofurans, total		49	Wire reclamation incineration	Stack	5	22 ng/dscm @ 3% O2	Estimated value from stack test results	115
Pentachlorodibenzofurans, total		49	Wood combustion	Stack, industrial wood-fired boiler	103009	23 ng/dscm @ 3% O2	Salt-laden wood, Tier 4 stack testing	115
Pentachlorodibenzofurans, total		4953	Municipal waste combustion	Mass burn	5	0.423 - 15,000 ng/Nm3 @ 12% CO2	Developed from test data, w/ various controls - ESP or water spray humidifier/dry sorbent injection	117
Pentachlorodibenzofurans, total		4953	Municipal waste combustion	Mass burn, water wall incinerator	5	33.2 - 5770 ng/Nm3 @ 12% CO2	n = 9, 8 locations, controlled with an ESP	118
Pentachlorodibenzofurans, total		4953	Municipal waste combustion	Mass burn, water wall incinerator	5	2.42 x 10E-8 - 5.42 x 10E-8 lb/ton feed	n = 8, 2 locations, controlled with an ESP	118
Pentachlorodibenzofurans, total		4953	Municipal waste combustion	Modular incinerator	5	97 - 1810 ng/Nm3 @ 12% CO2	Developed from test data, all uncontrolled	117
Pentachlorodibenzofurans, total		4953	Municipal waste combustion	Refuse derived fuel incinerator	5	139 - 9100 ng/Nm3 @ 12% CO2	Developed from test data, most ESP controlled, one with ESP/cyclone	117
Pentachlorodibenzofurans, total		806	Hospital waste incineration	Incinerator	50200509	2.20 x 10E-6 lb/ton feed	Uncontrolled, test data	147
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321764	4953	Municipal waste combustion	Mass burn, water wall incinerator	5	0.19 - 3.8 ng/Nm3 @ 12% CO2	n = 6, 4 locations, controlled with an ESP	118
Pentachlorodibenzo-p-dioxins, total		26	Pulp/paper mill, kraft paper recovery boilers	Stack	307001	Not detectable - 0.15 ng/dscm @ 3% O2	Three locations tested, detection limit <0.1 ng/dscm @ 3% O2	115
Pentachlorodibenzo-p-dioxins, total		3341	Secondary copper smelting	Stack	304002	2300 ng/dscm @ 3% O2	Estimated value from stack test results	115

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Pentachlorodibenzo-p-dioxins, total		49	Drum and barrel furnace	Stack	5	0.72 ng/dscm @ 3% O2	Tier 4 stack test sampling	115
Pentachlorodibenzo-p-dioxins, total		49	Industrial carbon regeneration	Stack		0.44 ng/dscm @ 3% O2	Tier 4 stack testing	115
Pentachlorodibenzo-p-dioxins, total		49	Sewage sludge incineration	Stack	5	Not detectable - 1.1 ng/dscm @ 3% O2	Three locations tested, detection limit <0.1 ng/dscm @ 3% O2	115
Pentachlorodibenzo-p-dioxins, total		49	Wire reclamation incineration	Stack	5	2.2 ng/dscm @ 3% O2	Estimated value from stack test results	115
Pentachlorodibenzo-p-dioxins, total		49	Wood combustion	Stack, industrial wood-fired boiler	102009	48 ng/dscm @ 3% O2	Salt-laden wood, Tier 4 stack testing	115
Pentachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	Mass burn	5	1.1 - 11,000 ng/Nm3 @ 12% CO2	Developed from test data, w/ various controls - ESP or water spray humidifier/dry sorbent injection	117
Pentachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	Mass burn, water wall incinerator	5	2.99 - 2700 ng/Nm3 @ 12% CO2	n = 9, 4 locations, controlled with an ESP	118
Pentachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	Mass burn, water wall incinerator	5	2.34 x 10E-8 - 1.36 x 10E-5 lb/ton feed	n = 5, 3 locations, controlled with an ESP	118
Pentachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	Modular incinerator	5	63 - 1540 ng/Nm3 @ 12% CO2	Developed from test data, all uncontrolled	117
Pentachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	Refuse derived fuel incinerator	5	54 - 2480 ng/Nm3 @ 12% CO2	Developed from test data, most ESP controlled, one with ESP/cyclone	117
Pentachlorodibenzo-p-dioxins, total		806	Hospital waste incineration	Incinerator	50200505	0.41 x 10E-6 lb/ton feed	Uncontrolled, test data	167
Pentachlorophenol (PCP)	87865	2491	Wood preserving	Creosote conditioning	30700501	0.0009 lbs/hr	Based on one sampling program at one facility	10
Pentachlorophenol (PCP)	87865	2491	Wood preserving	Creosote cool-down	307005	0.0012 lbs/hr	Based on one sampling program at one facility	10
Pentachlorophenol (PCP)	87865	2491	Wood preserving	Creosote treating cylinder fugitives	307005	0.63 mg/sm3 gas leaked	One measurement	6
Pentachlorophenol (PCP)	87865	2491	Wood preserving	Incineration of waste	307005	Not detectable	Controlled with baghouse	6
Pentachlorophenol (PCP)	87865	2491	Wood preserving	Penta treating cylinder fugitives	307005	3.6 mg/sm3 gas leaked	Average of 3 measurements	6
Pentachlorophenol (PCP)	87865	2491	Wood preserving	Pentachlorophenol conditioning	30700597	0.0011 lbs/hr	Based on one sampling program at one facility	10
Pentachlorophenol (PCP)	87865	2491	Wood preserving	Pentachlorophenol cool-down	30700597	0.0009 lbs/hr	Based on one sampling program at one facility	10

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POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Pentachlorophenol (PCP)	87865	2491	Wood preserving	Pentachlorophenol treating - fugitive	30700597	0.72 lbs/hr	Based on one sampling program at one facility	18
Pentachlorophenol (PCP)	87865	2491	Wood preserving	Thermal (pan) evaporation of creosote wastewater		2 mg/m3 gas vented	Average value	6
Pentachlorophenol (PCP)	87865	2491	Wood preserving	Thermal (pan) evaporation of pentachlorophenol wastewater		10,000 mg/m3 gas vented	Average value	6
Pentachlorophenol (PCP)	87865	2879	Pentachlorophenol production	General emissions	301033	1.1 lb/ton active ingredient	Control unknown, based on industry estimates	16
Pentachlorophenol (PCP)	87865	4953	Sewage sludge incineration	Fluidized-bed furnace	50100504	<0.0003 lb/ton dry sludge	One test, scrubber	101
Pentachlorophenol (PCP)	87865	4953	Sewage sludge incineration	Multiple hearth furnace	50100504	<0.00018 lb/ton dry sludge	One test, scrubber	101
Pentachlorophenol (PCP)	87865	4953	Wastewater treatment	POTW	50100701	6 lb/ton pentachlorophenol in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
1,3-Pentadiene	504609		Scrap tire, open burning	Tires in experimental burn hut		2.59 lb/ton tire	VOST samples burn rate = 1.5 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
1,3-Pentadiene	504609		Scrap tire, open burning	Tires in experimental burn hut		0.707 lb/ton tire	VOST samples burn rate = 2.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
1,3-Pentadiene	504609		Scrap tire, open burning	Tires in experimental burn hut		1.38 lb/ton tire	VOST samples burn rate = 0.9 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
1,3-Pentadiene	504609		Scrap tire, open burning	Tires in experimental burn hut		2.459 lb/ton tire	VOST samples burn rate = 1.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
1,3-Pentadiene	504609		Scrap tire, open burning	Tires in experimental burn hut		3.030 lb/ton tire	VOST samples burn rate = 1.4 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
1,3-Pentadiene	504609		Scrap tire, open burning	Tires in experimental burn hut		4.99 lb/ton tire	VOST samples burn rate = 0.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
1,3-Pentadiene	504609		Scrap tire, open burning	Tires in experimental burn hut		1.194 lb/ton tire	VOST samples burn rate = 0.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
1,3-Pentadiene	504609		Scrap tire, open burning	Tires in experimental burn hut		0.322 lb/ton tire	VOST samples burn rate = 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
1,3-Pentadiene	504609		Scrap tire, open burning	Tires in experimental burn hut		0.043 lb/ton tire	VOST samples burn rate = 3.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
1,3-Pentadiene	504609		Scrap tire, open burning	Tires in experimental burn hut		0.295 lb/ton tire	VOST samples burn rate = 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
1,3-Pentadiene	504609		Scrap tire, open burning	Tires in experimental burn hut		0.069 lb/ton tire	VOST samples burn rate = 2.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Phenanthrene	85018		Scrap tire, open burning	Tires in experimental burn hut		0.788 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.3 kg/hr, uncontrolled	212
Phenanthrene	85018		Scrap tire, open burning	Tires in experimental burn hut		0.466 lb/ton tire	XAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 1.7 kg/hr, uncontrolled	212
Phenanthrene	85018		Scrap tire, open burning	Tires in experimental burn hut		0.270 lb/ton tire	XAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 2.3 kg/hr, uncontrolled	212
Phenanthrene	85018		Scrap tire, open burning	Tires in experimental burn hut		0.511 lb/ton tire	Sum of PAH analy on lic extrat. of XAD-2 test & filter composit. shred condition = 2" by 2" piece, burn rate=1.3 kg/hr, controlled	212
Phenanthrene	85018		Scrap tire, open burning	Tires in experimental burn hut		0.498 lb/ton tire	Sum of PAH analy on lic extrat. of XAD-2 test & filter composit. shred condition = 2" by 2" piece, burn rate=1.1 kg/hr, controlled	212
Phenanthrene	85018		Scrap tire, open burning	Tires in experimental burn hut		0.583 lb/ton tire	Sum of PAH analy on lic extrat. of XAD-2 test & filter composit. shred condition = 2" by 2" piece, burn rate=1.7 kg/hr, controlled	212
Phenanthrene	85018		Scrap tire, open burning	Tires in experimental burn hut		0.366 lb/ton tire	Sum of PAH analy on lic extrat. of XAD-2 test & filter composit. shred condition = 2" by 2" piece, burn rate=2.3 kg/hr, controlled	212
Phenanthrene	85018	25	Wood combustion, industrial	Horizontal return tube	10200904	6.8 x 10E-6 lb/ton fuel (dry basis)	Results of GC/MS analysis of xad-2 resin extract	176
Phenanthrene	85018	25	Wood combustion, industrial	Balanced draft wicket stoker-fired industrial boiler	10200904	0.00032 lb/ton fuel	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 kg/s, boil. eff. 55.3%	177
Phenanthrene	85018	25	Wood combustion, industrial	Balanced draft wicket stoker-fired industrial boiler	10200904	4.4 x 10E-5 lb/ton fuel	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.54 kg/s, boil. eff. 61.3%	177
Phenol	108952		Scrap tire, open burning	Tires in experimental burn hut		1.473 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.3 kg/hr, uncontrolled	212
Phenol	108952		Scrap tire, open burning	Tires in experimental burn hut		1.33 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr, uncontrolled	212
Phenol	108952		Scrap tire, open burning	Tires in experimental burn hut		1.133 lb/ton tire	XAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 1.7 kg/hr, uncontrolled	212
Phenol	108952		Scrap tire, open burning	Tires in experimental burn hut		0.336 lb/ton tire	XAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 2.3 kg/hr, uncontrolled	212

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Phenol	108952		Scrap tire, open burning	Tires in experimental burn hut		0.175 lb/ton tire	VOST samples burn rate = 2.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Phenol	108952		Scrap tire, open burning	Tires in experimental burn hut		0.007 lb/ton tire	VOST samples burn rate = 6.63 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Phenol	108952	2491	Wood preserving	Creosote treating cylinder fugitives	307005	0.11 mg/scm3 gas leaked	One measurement	6
Phenol	108952	2491	Wood preserving	Incineration of waste	307005	3.0 ug/scm3 stack gas	Controlled with baghouse, average value	6
Phenol	108952	2491	Wood preserving	Penta treating cylinder fugitives	307005	0.55 mg/scm3 gas leaked	Average of 3 measurements	6
Phenol	108952	2491	Wood preserving	Thermal (pan) evaporation of creosote wastewater		30 mg/scm3 gas vented	Average value	6
Phenol	108952	2491	Wood preserving	Thermal (pan) evaporation of pentachlorophenol wastewater		200 mg/scm3 gas vented	Average value	6
Phenol	108952	25	Wood combustion, industrial	Horizontal return tube	10200904	8.6 x 10E-6 lb/ton fuel (dry basis)	Results of GC/MS analysis of xad-2 resin extract	176
Phenol	108952	25	Wood combustion, industrial	Balanced draft wicket stoker-fired industrial boiler	10200904	0.0002 lb/ton fuel	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 kg/s, boil. eff. 85.3%	177
Phenol	108952	25	Wood combustion, industrial	Balanced draft wicket stoker-fired industrial boiler	10200904	2.2 x 10E-5 lb/ton fuel	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.84 kg/s, boil. eff. 61.3%	177
Phenol	108952	28	Industrial wastewater treatment	Weir	301	0.26 x mass of pollutant in waste stream	Uncontrolled emissions	205
Phenol	108952	28	Industrial wastewater treatment	Oil-water separator	301	3.7 x 10E-05 x mass of polit in waste stream	Uncontrolled emissions	205
Phenol	108952	28	Industrial wastewater treatment	Treatment tank	301	2.1 x 10E-04 x mass of polit in waste stream	Uncontrolled emissions	205
Phenol	108952	28	Industrial wastewater treatment	Non-aerated biobasin	301	3.9 x 10E-04 x mass of polit in waste stream	Uncontrolled emissions	205
Phenol	108952	28	Industrial wastewater treatment	Aerated biobasin	301	1.9 x 10E-05 x mass of polit in waste stream	Uncontrolled emissions	205
Phenol	108952	28	Industrial wastewater treatment	Clarifier	301	8.6 x 10E-04 x mass of polit in waste stream	Uncontrolled emissions	205
Phenol	108952	28	Industrial wastewater treatment	Aerated equalization basin	301	0.077 x mass of polit in waste stream	Uncontrolled emissions	205

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Phenol	108952	28	Industrial wastewater treatment	Non-aerated equalization basin	301	0.016 x mass of pollt in waste stream	Uncontrolled emissions	209
Phenol	108952	28	Industrial wastewater treatment	Open trench	301	2.1 x 10E-05 x mass of pollt in waste stream	Uncontrolled emissions	209
Phenol	108952	28	Industrial wastewater treatment	Sump	301	1.9 x 10E-04 x mass of pollt in waste stream	Uncontrolled emissions	209
Phenol	108952	28	Industrial wastewater treatment	Lift station	301	2.0 x 10E-04 x mass of pollt in waste stream	Uncontrolled emissions	209
Phenol	108952	28	Industrial wastewater treatment	Junction box	301	1.1 x 10E-04 x mass of pollt in waste stream	Uncontrolled emissions	209
Phenol	108952	28	Industrial wastewater treatment	Manhole	301	5.7 x 10E-07 x mass of pollt in waste stream	Uncontrolled emissions	209
Phenol	108952	28	Industrial wastewater treatment	Drain	301	4.4 x 10E-06 x mass of pollt in waste stream	Uncontrolled emissions	209
Phenol	108952	2821	Phenolic resin production	Fugitive emissions	301018	0.26 lb/ton used	Engineering Judgement	13
Phenol	108952	2821	Phenolic resin production	General emissions	30101805	0.7 lb/ton used	Engineering Judgement	13
Phenol	108952	2821	Phenolic resin production	Storage	407	0.04 lb/ton used	Engineering Judgement	13
Phenol	108952	2833	Salicylic acid production (aspirin)	Fugitive emissions	301040	0.28 lb/ton used	From engineering estimates	13
Phenol	108952	2833	Salicylic acid production (aspirin)	General emissions	301040	0.7 lb/ton used	From engineering estimates	13
Phenol	108952	2833	Salicylic acid production (aspirin)	Storage	30104010	0.02 lb/ton used	From engineering estimates	13
Phenol	108952	2865	Phenol production	Fugitive emissions	30120280	0.82 lb/ton produced	Engineering estimates	13
Phenol	108952	2865	Phenol production	General emissions	30120201	3.56 lb/ton produced	Engineering estimates	13
Phenol	108952	2865	Phenol production	Storage	407084	0.06 lb/ton produced	Engineering estimates	13
Phenol	108952	2869	Acetone/phenol manufacture from cumene	Product transport loading vents, combined	30109151	0.22 lb/ton phenol produced	Control unknown, average of two industry estimates	15
Phenol	108952	2869	Acetone/phenol manufacture from cumene	Storage tank vents combined	30109151	0.102 lb/ton phenol produced	Uncontrolled, average of a calculated value and an industry estimate	15
Phenol	108952	2869	Adipic acid production	Fugitive emissions	30100180	0.24 lb/ton used	Data from site visit	13
Phenol	108952	2869	Adipic acid production	General emissions	30100101	2.4 lb/ton used	Data from site visit	13

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Phenol	108952	2869	Adipic acid production	Storage	30100106	0.02 lb/ton used	Data from site visit	13
Phenol	108952	2869	Bisphenol A production	Fugitive emissions	301152	0.24 lb/ton used	From engineering estimates	13
Phenol	108952	2869	Bisphenol A production	General emissions	30115201	0.7 lb/ton used	From engineering estimates	13
Phenol	108952	2869	Bisphenol A production	Storage	407	0.06 lb/ton used	From engineering estimates	13
Phenol	108952	2869	Caprolactam production	Fugitive emissions	30121080	0.26 lb/ton used	Data from site visit	13
Phenol	108952	2869	Caprolactam production	General emissions	30121001	2.6 lb/ton used	Data from site visit	13
Phenol	108952	2869	Caprolactam production	Storage	407060	0.02 lb/ton used	Data from site visit	13
Phenol	108952	2869	Dodecylphenol production	Fugitive emissions	301	0.38 lb/ton used	Engineering judgement	13
Phenol	108952	2869	Dodecylphenol production	General emissions	301	1.6 lb/ton used	Engineering judgement	13
Phenol	108952	2869	Dodecylphenol production	Storage	407084	0.02 lb/ton used	Engineering judgement	13
Phenol	108952	2869	Nonylphenol production	Fugitive emissions	301	0.38 lb/ton used	From engineering estimates	13
Phenol	108952	2869	Nonylphenol production	General emissions	301	1.6 lb/ton used	From engineering estimates	13
Phenol	108952	2869	Nonylphenol production	Storage	407084	0.02 lb/ton used	From engineering estimates	13
Phenol	108952	2879	Pentachlorophenol production	General emissions	301033	2.0 lb/ton active ingredient	Control unknown, based on industry estimates	16
Phenol	108952	3296	Flame attenuation wool glass fiber production	R-11 product production, curing	315012	0.2 lb/ton finished product	Controlled with a HVAF	173
Phenol	108952	3296	Flame attenuation wool glass fiber production	R-11 product production, curing	315012	2.7 lb/ton finished product	Controlled with a HVAF	173
Phenol	108952	3296	Flame attenuation wool glass fiber production	Ductboard production, total line	315012	9.6 lb/ton finished product	Controlled with a HVAF	173
Phenol	108952	3296	Flame attenuation wool glass fiber production	Ductboard production, curing and cooling	315012	0.1 lb/ton finished product	Controlled with a HVAF	173
Phenol	108952	3296	Rotary spin wool glass fiber production	Ductboard production	30501204	7.68 lb/ton finished product	Uncontrolled, may not represent all organics in exhaust stream	97
Phenol	108952	3296	Rotary spin wool glass fiber production	Heavy density product production	30501204	1.04 lb/ton finished product	Uncontrolled, may not represent all organics in exhaust stream	97
Phenol	108952	3296	Rotary spin wool glass fiber production	R-11 product production	30501204	1.84 lb/ton finished product	Uncontrolled, may not represent all organics in exhaust stream	97
Phenol	108952	3296	Rotary spin wool glass fiber production	R-19 product production	30501204	1.92 lb/ton finished product	Uncontrolled, may not represent all organics in exhaust stream	97

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POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Phenol	108952	3296	Rotary spin wool glass fiber production	R-14 product production, curing and cooling	315012	0.2 lb/ton finished product	Controlled with a venturi scrubber	173
Phenol	108952	3296	Rotary spin wool glass fiber production	R-14 product production, forming	315012	0.7 lb/ton finished product	Controlled with a venturi scrubber	173
Phenol	108952	3296	Rotary spin wool glass fiber production	R-14 product production, total line	315012	0.9 lb/ton finished product	Controlled with a wet scrubber	173
Phenol	108952	3296	Rotary spin wool glass fiber production	R-14 product production, curing and cooling	315012	0.2 lb/ton finished product	Controlled with a wet scrubber	173
Phenol	108952	3296	Rotary spin wool glass fiber production	R-14 product production, forming	315012	0.7 lb/ton finished product	Controlled with a wet scrubber	173
Phenol	108952	3296	Rotary spin wool glass fiber production	R-11 product production	315012	0.4 lb/ton finished product	Controlled with a HVAF	173
Phenol	108952	3296	Rotary spin wool glass fiber production	Heavy density insulation production	315012	0.7 lb/ton finished product	Controlled with a incinerator	173
Phenol	108952	3296	Rotary spin wool glass fiber production	Ductboard production	315012	3.7 lb/ton finished product	Controlled with a wet ESP	173
Phenol	108952	3296	Rotary spin wool glass fiber production	R-19 product production	315012	1.8 lb/ton finished product	Controlled with a wet ESP	173
Phenol	108952	3296	Rotary spin wool glass fiber production	R-11 product production, forming and curing	315012	1.9 lb/ton finished product	Controlled with a wet ESP	173
Phenol	108952	3296	Rotary spin wool glass fiber production	Cooling process	30501204	0.011 kg/Mg finished product	Uncontrolled, average emission factor for 4 different sized facilities	173
Phenol	108952	3296	Rotary spin wool glass fiber production	Curing process	30501205	0.15 kg/Mg finished product	Uncontrolled, average emission factor for 4 different sized facilities	173
Phenol	108952	3296	Rotary spin wool glass fiber production	Forming process	30501204	1.36 kg/Mg finished product	Uncontrolled, average emission factor for 4 different sized facilities	173
Phenol	108952	3334	Primary aluminum production	Soderberg potline	303001	0.298 lb/ton Al produced	Single test report, one plant, controlled, baghouse	91
Phenol	108952	3334	Primary aluminum production	Soderberg potline	303001	0.21 lb/ton Al produced	Single test report, one plant, controlled, baghouse, material that escaped primary control system	91
Phenol	108952	4953	Sewage sludge incineration	Fluidized-bed furnace	50100506	<3.8 x 10E-5 lb/ton sludge	One test, scrubber	101
Phenol	108952	4953	Sewage sludge incineration	Multiple hearth furnace	50100506	0.0691 lb/ton dry sludge	One test, scrubber	101

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Phenol	108952	4953	Wastewater treatment	POTW	50100701	1.8 lb/ton phenol in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
Phenol	108952	7699	Tank truck cleaning	Entire process	49004	0.012 lb/truck cleaned	Emission measurement	97
Phenols			Wood combustion, residential	Woodstove or fireplace		2.0 lb/ton wood burned	Uncontrolled	94
2-Phenyl-1-propanol	1123059	2865	Acetone/phenol manufacture from cumene	Cleavage section vents (combined)	30120211	6.8 x 10E-6 lb/ton phenol	Controlled (unspecified), based on test data, 1977 data, average factors	125
2-Phenyl-1-propanol	1123059	2865	Acetone/phenol manufacture from cumene	Cumene peroxidation vent	30120202	0.0018 lb/ton phenol	Controlled (not specified), based on sampling, 1977 data, average factors	125
Phosgene	75445	2821	Polycarbonate production	Fugitive emissions	301018	0.0114 lb/ton phosgene produced	Hypothetical site, upper end of range, lower value is 0.0003 lb/ton phosgene produced	121
Phosgene	75445	2821	Polycarbonate production	Process waste	301018	0.0006 lb/ton phosgene		121
Phosgene	75445	2821	Polycarbonate production	Process vents	301018	0.0132 lb/ton phosgene produced	Hypothe. site, value for polycarb. alone, add to value for phos. to get total for phos.-polyc. plant	121
Phosgene	75445	2865	Methylene di-para-phenylene isocyanate (MDI) production	Process - general	301	0.0132 lb/ton produced	Derived from State air emission files	13
Phosgene	75445	2865	Toluene diisocyanate production	Fugitive emissions	30118180	0.0264 lb/ton phosgene produced	Hypothetical site, upper end of range, lower value is 0.0006 lb/ton	121
Phosgene	75445	2865	Toluene diisocyanate production	Process - general	30118101	0.012 lb/ton produced	Derived from State air emission files	13
Phosgene	75445	2865	Toluene diisocyanate production	Process waste	30118151	0.00025 lb/ton phosgene produced		121
Phosgene	75445	2865	Toluene diisocyanate production	Process vents	30118101	0.0015 lb/ton phosgene produced	Hypothetical site, value for TDI produc., add value for phosgene to get total phosgene-TDI plant	121
Phosgene	75445	2869	Phosgene production	Fugitive emissions		0.066 lb/ton produced	Hypothetical site, upper end of range, lower value is 0.0012 lb/ton	121
Phosgene	75445	2869	Phosgene production	Fugitive emissions	301	0.34 lb/ton produced	Based on data from one site	13
Phosgene	75445	2869	Phosgene production	Process waste		0.0005 lb/ton phosgene produced		121
Phosgene	75445	2869	Phosgene production	Process vents		0.003 lb/ton produced	Hypothetical site, incinerator and scrubber control, includes storage tanks	121
Phosgene	75445	2869	Phosgene/diisocyanate production	Fugitive emissions	301	0.058 lb/hr operation	Based on measurements at a chemical plant	14

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Phosgene	75445	2879	Herbicide production	Fugitive emissions		0.012 lb/ton phosgene produced	Hypothetical plant, upper end of range, lower value is 3 x 10-4 lb/ton	121
Phosgene	75445	2879	Herbicide production	Process vessels		0.0006 lb/ton phosgene produced		121
Phosgene	75445	2879	Herbicide production	Process vents		0.0132 lb/ton phosgene produced	Hypothe. plant, value is for herbic. alone, add to phos. value to get value for phos.-herbic. plant	121
Phosphorus (yellow or white)	7723140		Wood combustion, residential	Woodstove without baffle		1.4 x 10E-4 lb/ton wood	Uncontrolled, based on one study, nonbaffled stove burning green pine	58
Phosphorus (yellow or white)	7723140	226	Woven fabric finishing	Curing oven - resin finish	330001	7.8 x 10E-4 lb/ton fabric	Uncontrolled, average of three tests	92
Phosphorus (yellow or white)	7723140	226	Woven fabric finishing	Heat setting	330001	1.9 x 10E-4 lb/ton fabric	Uncontrolled, based on test data	92
Phosphorus (yellow or white)	7723140	226	Woven fabric finishing	Tenter frames - resin finishing	330001	3.6 x 10E-3 lb/ton fabric	Uncontrolled, average of four tests	92
Phosphorus (yellow or white)	7723140	226	Woven fabric finishing	Thermosol dyeing	330001	3.4 x 10E-4 lb/ton fabric	Uncontrolled, average of two tests	92
Phosphorus (yellow or white)	7723140	25	Wood combustion, industrial	Horizontal return tube	10200906	>144.9 lb/10E12 Btu heat input	Sample results, 1 plant, wood flowrate = .514 kg/s, boiler has 3-pass design w/flyash reinjection, uncontrolled	176
Phosphorus (yellow or white)	7723140	25	Wood combustion, industrial	Balanced draft wicket stoker-fired industrial boiler	10200906	>0.007 lb/ton fuel or >44,380 lb/10E12 Btu	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 kg/s, boil. eff. 59.3%	177
Phosphorus (yellow or white)	7723140	25	Wood combustion, industrial	Balanced draft wicket stoker-fired industrial boiler	10200906	>0.0062 lb/ton fuel or >833.4 lb/10E12 Btu	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.54 kg/s, boil. eff. 61.3%	177
Phthalic anhydride	85449	2865	Phthalic anhydride production - naphthalene process	Flaker/bagger	301019	0.20 lb/ton PA produced	Uncontrolled, test data and engineering judgement	120
Phthalic anhydride	85449	2865	Phthalic anhydride production - naphthalene process	Flaker/bagger	301019	0.002 lb/ton PA produced	Controlled, test data and engineering judgement	120
Phthalic anhydride	85449	2865	Phthalic anhydride production - naphthalene process	Main process incinerator	301019	40.8 lb/ton PA produced	Uncontrolled, test data and engineering judgement	120
Phthalic anhydride	85449	2865	Phthalic anhydride production - naphthalene process	Main process incinerator	301019	1.42 lb/ton PA produced	Controlled, test data and engineering judgement	120

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Phthalic anhydride	85449	2865	Phthalic anhydride production - naphthalene process	Secondary incinerator	301019	19.6 lb/ton PA produced	Uncontrolled, test data and engineering judgement	120
Phthalic anhydride	85449	2865	Phthalic anhydride production - naphthalene process	Secondary incinerator	301019	0.2 lb/ton PA produced	Controlled (not specified), test data and engineering judgement	120
Phthalic anhydride	85449	2865	Phthalic anhydride production - naphthalene process	Storage tank emissions	407004	0.7 lb/ton PA produced	Uncontrolled, test data and engineering judgement	120
Phthalic anhydride	85449	2865	Phthalic anhydride production - naphthalene process	Storage tank emissions	407	0.008 lb/ton PA produced	Controlled, test data and engineering judgement	120
Phthalic anhydride	85449	2865	Phthalic anhydride production - naphthalene process	Transport loading	301019	0.90 lb/ton PA produced	Uncontrolled, test data and engineering judgement	120
Phthalic anhydride	85449	2865	Phthalic anhydride production - naphthalene process	Transport loading	301019	0.010 lb/ton PA produced	Controlled, test data and engineering judgement	120
Phthalic anhydride	85449	2865	Phthalic anhydride production - xylene process	Flaker/bagger	301019	0.20 lb/ton PA produced	Uncontrolled, based on test data and engineering judgement	120
Phthalic anhydride	85449	2865	Phthalic anhydride production - xylene process	Flaker/bagger	301019	0.002 lb/ton PA produced	Controlled, test data and engineering judgement	120
Phthalic anhydride	85449	2865	Phthalic anhydride production - xylene process	Main process incinerator	3010.9	1.09 lb/ton PA produced	Controlled, based on test data	120
Phthalic anhydride	85449	2865	Phthalic anhydride production - xylene process	Main process incinerator	301019	31.2 lb/ton PA produced	Uncontrolled, based on test data and engineering judgement	120
Phthalic anhydride	85449	2865	Phthalic anhydride production - xylene process	Secondary incinerator	301019	0.212 lb/ton PA produced	Controlled, test data and engineering judgement	120
Phthalic anhydride	85449	2865	Phthalic anhydride production - xylene process	Secondary incinerator	301019	21.2 lb/ton PA produced	Uncontrolled, based on test data and engineering judgement	120
Phthalic anhydride	85449	2865	Phthalic anhydride production - xylene process	Storage tank emissions	407	0.006 lb/ton PA produced	Controlled, test data and engineering judgement	120

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Phthalic anhydride	85449	2865	Phthalic anhydride production - xylene process	Storage tank emissions	407004	0.58 lb/ton PA produced	Uncontrolled, based on test data and engineering judgement	120
Phthalic anhydride	85449	2865	Phthalic anhydride production - xylene process	Transport loading	301019	0.90 lb/ton PA produced	Uncontrolled, based on test data and engineering judgement	120
Phthalic anhydride	85449	2865	Phthalic anhydride production - xylene process	Transport loading	301019	0.01 lb/ton PA produced	Controlled, test data and engineering judgement	120
Polychlorinated biphenyls (PCBs)	1336363		Waste oil combustion	Waste oil-fired boilers (<150 million Btu/h) or space heaters	1	0.0083 lb/1000 gal oil burned	Uncontrolled, based on emissions data and engineering judgement, assumes 97% DRE	55
Polychlorinated biphenyls (PCBs)	1336363	4953	Municipal waste combustion	Existing mass burn heat recovery facility	501001	4.2 x 10E-6 lb/ton of waste combusted	Controlled by ESP, based on source test data	118
Polychlorinated biphenyls (PCBs)	1336363	4953	Municipal waste combustion	Existing mass burn heat recovery facility	501001	2 x 10E-7 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Polychlorinated biphenyls (PCBs)	1336363	4953	Municipal waste combustion	Mass burn, nonheat recovery facility	501001	4.2 x 10E-6 lb/ton of waste combusted	Controlled by ESP, based on source test data	118
Polychlorinated biphenyls (PCBs)	1336363	4953	Municipal waste combustion	Mass burn, nonheat recovery facility	501001	2 x 10E-7 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Polychlorinated biphenyls (PCBs)	1336363	4953	Municipal waste combustion	Modular fuel facility	501001	9.0 x 10-6 lb/ton of waste combusted	Controlled by ESP, based on source test data	113
Polychlorinated biphenyls (PCBs)	1336363	4953	Municipal waste combustion	Modular incinerator	501001	6 x 10E-7 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Polychlorinated biphenyls (PCBs)	1336363	4953	Municipal waste combustion	Projected or state-of-the-art mass burn heat recovery facility	501001	4.2 x 10E-7 lb/ton of waste combusted	Controlled by ESP, based on source test data	118
Polychlorinated biphenyls (PCBs)	1336363	4953	Municipal waste combustion	Projected or state-of-the-art mass burn heat recovery facility	501001	2 x 10E-8 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Polychlorinated biphenyls (PCBs)	1336363	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	0.0028 lb/ton of waste combusted	Controlled by ESP, based on source test data	118
Polychlorinated biphenyls (PCBs)	1336363	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	1.8 x 10E-4 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Polychlorinated biphenyls (PCBs)	1336363	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	2.6 x 10E-6 lb/ton RDF combusted	100% RDF fuel only, ESP control only, one data point only	180

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POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Polychlorinated biphenyls (PCBs)	1336363	4953	Municipal waste combustion	Modular starved-air combustor	501001	5.0 x 10E-6 lb/ton feed	Uncontrolled, overall average of several source averages, range is 5.0 x 10E-7 - 1.14 x 10E-5 lb/ton	180
Polychlorinated biphenyls (PCBs)	1336363	4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	2.4 x 10E-5 lb/ton feed	Capacity > 400 tons/day, ESP control only, one data point only, detection limit reported	180
Polychlorinated biphenyls (PCBs)	1336363	4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	2.4 x 10E-5 lb/ton feed	Capacity > 400 tons/day, uncontrolled, one data point only, detection limit reported	180
Polychlorinated biphenyls (PCBs)	1336363	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age modive	501001	3.8 x 10E-5 lb/ton feed	Capacity < 400 tons/day, ESP control only, overall average of several source averages, range is 1.76 x 10E-5 - 6.8 x 10E-5 lb/ton	180
Polychlorinated biphenyls (PCBs)	1336363	4953	Municipal waste combustion	Mass burn waterwall combustor, built before 1980	501001	5.4 x 10E-6 lb/ton feed	ESP control only, overall average of several source averages, range is 4.2 x 10E-7 - 1.0 x 10E-5 lb/ton	180
Polychlorinated biphenyls (PCBs)	1336363	4953	Sewage sludge incineration	Fluidized-bed furnace	50100504	(0.00126-(0.001352 lb/ton dry sludge	One test, scrubber, range over seven different PCB	101
Polychlorinated biphenyls (PCBs)	1336363	4953	Sewage sludge incineration	Multiple hearth furnace	50100504	((6.8 - 8.16) x 10E-6 lb/ton dry sludge	One test, scrubber, range over seven different PCB	101
Polychlorinated dibenzofurans, total		3241	Cement kiln cofiring waste	Stack - flue gas	305004	Not detectable - 2.09 ng/m3	3 loc., liquid waste fuel contain. chlor. comp., detect. limits range 1.6-4.9 ng/m3 or 1 ng/ul inj.	119
Polychlorinated dibenzofurans, total		3274	Lime kiln cofiring wastes	Lime kiln	305016	Not detectable	1 location, baghouse dust sample, fire petrol. coke + waste organics, detec. lim (1-50)x10E-8 lb/ton	119
Polychlorinated dibenzofurans, total		3274	Lime kiln cofiring wastes	Lime kiln - stack	305016	Not detectable	One location, stack part. sample, fire petrol. coke + waste organics, detec. limit 0.034-2.0 ng/m3	119
Polychlorinated dibenzofurans, total		49	Coal and refuse-derived fuel combustion	Flue gas	1	Not detectable	One location, detection limit = 0.25 ng/m3	119
Polychlorinated dibenzofurans, total		49	Hazardous waste incineration	Bottom ash	50300501	0.00671 lb/ton	Use of afterburner, fuel = transformer oil w/ PCBs + insul. from slum. & copper wiring, 1 sample	119
Polychlorinated dibenzofurans, total		49	Hazardous waste incineration	Rotary kiln - flue gas	50300501	Not detectable - 20.3 ng/m3	One location	119
Polychlorinated dibenzofurans, total		49	Hazardous waste incineration	Rotary kiln - flue gas	50300501	4.18 x 10E-11 lb/train	Penta homologue only	119
Polychlorinated dibenzofurans, total		49	Waste combustion - industrial	Stack - fly ash	503	6.4 x 10E-4 lb/ton	One site tested, homologue data given in refer., lesser data may be avail. from indiv. references	116
Polychlorinated dibenzofurans, total		49	Waste combustion - industrial boilers cofiring wastes	Flue gas	102	0.15 - 5.5 ng/m3	Cofiring waste containing chlorinated materials, four locations	119

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Polychlorinated dibenzofurans, total		49	Waste combustion - industrial boilers cofiring wastes	Fly ash	102	6 x 10E-4 lb/ton	One location, controls unknown	119
Polychlorinated dibenzofurans, total		49	Waste oil combustion - cofire PCB-spiked waste oil/No.6 oil	Flue gas from commercial boiler	101	Not detectable	Waste oil = 10% total feed, one location, detection limit = 0.031 - 0.10 ug/m3	119
Polychlorinated dibenzofurans, total		49	Wastewater treatment - organics removal by activated carbon	Regeneration of activated carbon using fluidized bed system - afrburn		0.19 - 0.39 ng/m3	With afterbur., postchlorin. of wastewater relative to activated carbon bed, detec.limit 0.004 ng/m3	119
Polychlorinated dibenzofurans, total		49	Wastewater treatment - organics removal by activated carbon	Regeneration of activated carbon using fluidized bed system - recupor.		0.015 - 4.76 ng/m3	With afterbur., postchlorin. of wastewater relative to activated carbon bed, detec.limit 0.004 ng/m3	119
Polychlorinated dibenzofurans, total		4911	Coal combustion, utility	Coal-fired boiler, flue gas	101	Not detectable	Four locations, 8-day composites, detection limits vary from 2 x 10E-7 - 1.4 x 10E-6 lb/ton	119
Polychlorinated dibenzofurans, total		4911	Coal combustion, utility	Coal-fired boiler, fly ash	101	Not detectable	Four locations, 8-day composites, detection limits vary from 2 x 10 E-7 - 1.4 x 10E-6 lb/ton	119
Polychlorinated dibenzofurans, total		495	Sewage sludge incineration	Multiple hearth - flue gas	5	501 - 2240 ng/m3	Controlled with a water scrubber, total of three samples	119
Polychlorinated dibenzofurans, total		495	Wood combustion	Fluidized bed system, PCP-treated wood	5	4.82 x 10E-4 lb/ton	Fly ash sample	119
Polychlorinated dibenzofurans, total		495	Wood combustion	Incinerator, PCP-treated wood	502	0.223 - 0.7842 lb/ton feed	Based on pilot-scale incineration, stack and smoke gas samples combined, n = 8	119
Polychlorinated dibenzofurans, total		495	Wood combustion	Incinerator, PCP-treated wood	5	587 ng/m3	Flue gas sample	119
Polychlorinated dibenzofurans, total		4953	Municipal waste combustion	ESP catch - fly ash	5	Not detectable - 4.072 x 10E-3 lb/ton	Appr. 40 sites tested, homologue data given in refer., lesser data may be avail. from indiv. refer.	116
Polychlorinated dibenzofurans, total		4953	Municipal waste combustion	Flue gas from stack - fly ash	5	440.1 - 1212 ng/m3	Four sites tested, homologue data given in refer., lesser data may be avail. from indiv. references	116
Polychlorinated dibenzofurans, total		4953	Municipal waste combustion	Stack - fly ash	5	1322 ng/m3	One site tested, homologue data given in refer., lesser data may be avail. from indiv. references	116
Polychlorinated dibenzofurans, total		4953	Municipal waste combustion	Stack - fly ash	5	1.7 x 10E-4 lb/ton	One site tested, homologue data given in refer., lesser data may be avail. from indiv. references	116
Polychlorinated dibenzofurans, total		806	Hospital waste incineration	Flue gas	50200506	25 - 197 ng/m3	Based on testing at four locations in the U.S. and Canada	119
Polychlorinated dibenzofurans, total		806	Hospital waste incineration	Flue gas	50200606	25 ng/m3	Flue gas sample, n = 3	119

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Polychlorinated dibenzofurans, total		806	Hospital waste incineration	Incinerator	50200505	11.71 x 10E-6 lb/ton feed	Uncontrolled, test data	147
Polychlorinated dibenzo-p-dioxins, total			Internal combustion engines - mobile	Automobile emissions		0 x 10E-9 lb/ton	Sample was a scraping from muffler of car using leaded gas, tetra, hexa, hepta, octa homologues only	119
Polychlorinated dibenzo-p-dioxins, total			Internal combustion engines - mobile	Automobile emissions		2 x 10E-8 - 1.6 x 10E-7 lb/ton	2 samples scraped from muffler, used unlead gas w/ catalytic converter, tetra/hexa/hepta/octa homol.	119
Polychlorinated dibenzo-p-dioxins, total			Internal combustion engines - mobile	Diesel truck emissions		7.8 x 10E-7 - 0 x 10E-7 lb/ton	Samples of scrapings from 2 mufflers, diesel fuel used	119
Polychlorinated dibenzo-p-dioxins, total		3241	Cement kilns cofiring waste	Stack - flue gas	305006	Not detectable	3 loc., liquid waste fuel contain. chlor. comp., detect. limits range 1.6-4.9 ng/m3 or 1 ng/ul inj.	119
Polychlorinated dibenzo-p-dioxins, total		3274	Lime kilns cofiring wastes	Lime kiln	305016	Not detectable	1 location, baghouse dust sample, fire petrol. coke + waste organics, detec. lim (1-50)x10E-8 lb/ton	119
Polychlorinated dibenzo-p-dioxins, total		3274	Lime kilns cofiring wastes	Lime kiln - stack	305016	Not detectable	One location, stack part. sample, fire petrol. coke + waste organics, detec. limit 0.034-2.0 ng/m3	119
Polychlorinated dibenzo-p-dioxins, total		49	Coal and refuse-derived fuel combustion	Flue gas	1	Not detectable	One location, detection limit = 0.29 ng/m3	119
Polychlorinated dibenzo-p-dioxins, total		49	Hazardous waste incineration	Bottom ash	50300501	0.00108 lb/ton	Use of afterburner, fuel + transformer oil w/ PCBs + insul. from alum. & copper wirings, 1 sample	119
Polychlorinated dibenzo-p-dioxins, total		49	Hazardous waste incineration	Rotary kiln - flue gas	50300501	Not detectable - 49.5 ng/m3	Two locations	119
Polychlorinated dibenzo-p-dioxins, total		49	Hazardous waste incineration	Rotary kiln - flue gas	50300501	1.46 x 10E-10 lb/train	Penta, hepta, octa CDD only	119
Polychlorinated dibenzo-p-dioxins, total		49	Hazardous waste incineration	Rotary kiln - particulate	50300501	0.01942 - 1.695 lb/ton	One location, n = 3, both solid & liquid waste, no supplementary fuel used	119
Polychlorinated dibenzo-p-dioxins, total		49	Hazardous waste incineration	Rotary kiln - particulate	50300501	2.6 x 10E-5 - 0.002128 lb/ton	1 location, n=4, both solid & liquid waste, use of suppl. fuel, hepta, hexa, octa homologues only	119
Polychlorinated dibenzo-p-dioxins, total		49	Hazardous waste incineration	Stack - fly ash	50390501	3.5 x 10E-5 - 0.227 lb/ton	3 sites tested, homologue data given in refer., lesser data may be avail. from indiv. references	116
Polychlorinated dibenzo-p-dioxins, total		49	Hazardous waste incineration	Tar burner - particulate	50300501	5.12 x 10E-4 - 1.144 x 10E-3 lb/ton	One location, n = 4, Use natural gas as suppl. fuel, hexa, hepta, octa homologues only	119
Polychlorinated dibenzo-p-dioxins, total		49	Oil and coal combustion	Stack - particulate	102	1.36 x 10E-4 lb/ton	No penta homologue included, one location, TCDD detection = 4 x 10E-5 lb/ton	119
Polychlorinated dibenzo-p-dioxins, total		49	Waste combustion - industrial	Stack - fly ash	903	0.00142 lb/ton	One site tested, homologue data given in refer., lesser data may be avail. from indiv. references	116

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Polychlorinated dibenzo-p-dioxins, total		49	Waste combustion - industrial boilers cofiring wastes	Flue gas	102	Not detectable - 76.4 ng/m3	Cofiring waste containing chlor. mater., at upper end of range. PCDDs found in feed for 1 of 3 loc.	119
Polychlorinated dibenzo-p-dioxins, total		49	Waste combustion - industrial boilers cofiring wastes	Fly ash	102	0.0012 lb/ton	One location, controls unknown	119
Polychlorinated dibenzo-p-dioxins, total		49	Waste oil combustion - cofire PCB-spiked waste oil/No.6 oil	Flue gas from commercial boiler	101	Not detectable	Waste oil = 10% total feed, one location, detection limit = 0.03% - 0.10 ug/m3	119
Polychlorinated dibenzo-p-dioxins, total		49	Wastewater treatment - organics removal by activated carbon	Regeneration of activated carbon using fluidized bed system - afterburn		Not detectable - 1.4 ng/m3	With afterbur., postchlorin. of wastewater relative to activated carbon bed, detec.limit 0.004 ng/m3	119
Polychlorinated dibenzo-p-dioxins, total		49	Wastewater treatment - organics removal by activated carbon	Regeneration of activated carbon using fluidized bed system - recuper.		Not detectable - 3.71 ng/m3	With afterbur., postchlorin. of wastewater relative to activated carbon bed, detec.limit 0.004 ng/m3	119
Polychlorinated dibenzo-p-dioxins, total		49	Wastewater treatment - organics removal by activated carbon	Regeneration of activated carbon using fluidized bed system - stack		1.58 ng/m3	With afterbur., postchlorin. of wastewater relative to activated carbon bed, octa, hepta homol. only	119
Polychlorinated dibenzo-p-dioxins, total		4911	Coal combustion, utility	Coal-fired boiler, fly ash	101	Not detectable	Four locations, 5-day composites, detection limits vary from 2 x 10E-7 - 1.4 x 10E-6 lb/ton	119
Polychlorinated dibenzo-p-dioxins, total		4911	Coal combustion, utility	Utility boiler, flue gas	101	Not detectable	Four locations, 5-day composites, detection limits vary from 2 x 10E-7 - 1.4 x 10E-6 lb/ton	119
Polychlorinated dibenzo-p-dioxins, total		4952	Sewage sludge incineration	Multiple hearth - flue gas	5	483 - 1140 ng/m3	Controlled with a water scrubber, total of three samples	119
Polychlorinated dibenzo-p-dioxins, total		4953	Wood combustion	Fluidized bed system, PCP-treated wood	5	6.48 x 10E-4 lb/ton	Fly ash sample	119
Polychlorinated dibenzo-p-dioxins, total		4953	Wood combustion	Incinerator, PCP-treated wood	501	0.223 - 0.784 lb/ton feed	Based on pilot-scale incineration, stack and waste gas samples combined, n = 5	119
Polychlorinated dibenzo-p-dioxins, total		4953	Wood combustion	Incinerator, PCP-treated wood	5	1520 ng/m3	Flue gas sample	119
Polychlorinated dibenzo-p-dioxins, total		4953	Municipal waste combustion	ESP catch - fly ash	5	Not detectable - 5.992 x 10-3 lb/ton	Repr. 40 sites tested, homologue data given in refer., isomer data may be avail. from indiv. refer.	116
Polychlorinated dibenzo-p-dioxins, total		4953	Municipal waste combustion	Existing mass burn heat recovery facility	501001	1.92 x 10E-6 lb/ton of waste combusted	Controlled by ESP, based on source tests, emissions = 2,3,7,8-TCDD equivalent	118
Polychlorinated dibenzo-p-dioxins, total		4953	Municipal waste combustion	Existing mass burn heat recovery facility	501001	1.2 x 10E-7 lb/ton of waste combusted	Dry alk. scrubber & fabric filter contr., assumes 95% contr. effic., emis. = 2,3,7,8-TCDD equiv.	118

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Polychlorinated dibenzo-p-dioxins, total		4953	Municipal waste combustion	Existing refuse-derived fuel facility	501001	4 x 10E-6 lb/ton of waste combusted	Controlled by ESP, based on source tests, emissions = 2,3,7,8-TCDD equivalent	118
Polychlorinated dibenzo-p-dioxins, total		4953	Municipal waste combustion	Existing refuse-derived fuel facility	501001	2 x 10E-7 lb/ton of waste combusted	Dry alk. scrubber & fabric filter contr., assumes 95% contr. effic., emis. = 2,3,7,8-TCDD equiv.	118
Polychlorinated dibenzo-p-dioxins, total		4953	Municipal waste combustion	Flue gas from stack - fly ash	5	45.4 - 906 ng/m3	Four sites tested, homologue data given in refer., isomer data may be avail. from indiv. references	116
Polychlorinated dibenzo-p-dioxins, total		4953	Municipal waste combustion	Mass burn, nonheat recovery facility	501001	6.2 x 10E-6 lb/ton of waste combusted	Controlled by ESP, based on source tests, emissions = 2,3,7,8-TCDD equivalent	118
Polychlorinated dibenzo-p-dioxins, total		4953	Municipal waste combustion	Mass burn, nonheat recovery facility	501001	6 x 10E-7 lb/ton of waste combusted	Dry alk. scrubber & fabric filter contr., assumes 95% contr. effic., emis. = 2,3,7,8-TCDD equiv.	118
Polychlorinated dibenzo-p-dioxins, total		4953	Municipal waste combustion	Modular incinerator	501001	1.38 x 10E-7 lb/ton of waste combusted	Controlled by ESP, based on source tests, emissions = 2,3,7,8-TCDD equivalent	118
Polychlorinated dibenzo-p-dioxins, total		4953	Municipal waste combustion	Modular incinerator	501001	8 x 10E-9 lb/ton of waste combusted	Dry alk. scrubber & fabric filter contr., assumes 95% contr. effic., emis. = 2,3,7,8-TCDD equiv.	118
Polychlorinated dibenzo-p-dioxins, total		4953	Municipal waste combustion	Projected or state-of-the-art mass burn heat recovery facility	501001	1.16 x 10E-7 lb/ton of waste combusted	Controlled by ESP, based on source tests, emissions = 2,3,7,8-TCDD equivalent	118
Polychlorinated dibenzo-p-dioxins, total		4953	Municipal waste combustion	Projected or state-of-the-art mass burn heat recovery facility	501001	8 x 10E-9 lb/ton of waste combusted	Dry alk. scrubber & fabric filter contr., assumes 95% contr. effic., emis. = 2,3,7,8-TCDD equiv.	118
Polychlorinated dibenzo-p-dioxins, total		4953	Municipal waste combustion	Projected or state-of-the-art refuse-derived fuel facility	501001	2.4 x 10E-6 lb/ton of waste combusted	Controlled by ESP, based on source tests, emissions = 2,3,7,8-TCDD equivalent	118
Polychlorinated dibenzo-p-dioxins, total		4953	Municipal waste combustion	Projected or state-of-the-art refuse-derived fuel facility	501001	1.6 x 10-7 lb/ton of waste combusted	Dry alk. scrubber & fabric filter contr., assumes 95% contr. effic., emis. = 2,3,7,8-TCDD equiv.	118
Polychlorinated dibenzo-p-dioxins, total		4953	Municipal waste combustion	Stack - fly ash	5	1940 ng/m3	One site tested, homologue data given in refer., isomer data may be avail. from indiv. references	116
Polychlorinated dibenzo-p-dioxins, total		4953	Municipal waste combustion	Stack - fly ash	5	4.4 x 10E-4 lb/ton	One site tested, homologue data given in refer., isomer data may be avail. from indiv. references	116
Polychlorinated dibenzo-p-dioxins, total		806	Hospital waste incineration	Flue gas	50200505	15 - 84 ng/m3	Based on testing at four locations in the U.S. and Canada	119
Polychlorinated dibenzo-p-dioxins, total		806	Hospital waste incineration	Flue gas	50200505	18 ng/m3	Flue gas sample, n = 2	119

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Polychlorinated dibenzo-p-dioxins, total		806	Hospital waste incineration	Incinerator	50200505	9.30 x 10E-6 lb/ton feed	Uncontrolled, test data	167
Polycyclic organic matter			Chain saw exhausts	Chain saw		75 ug/m3	Measured during laboratory tests	114
Polycyclic organic matter			Chain saw exhausts	Chain saw		31 ug/m3	Average of range of values measured in field use (19-42 ug/m3)	114
Polycyclic organic matter			Coal combustion	Anthracite coal-fired hand-stoked boiler, commercial/residential	10300103	97.5 lb/10E12 Btu heat input	Represents both gaseous and particulate POM	114
Polycyclic organic matter			Coal combustion	Anthracite coal-fired magazine feed boiler, commercial/residential	103001	9.73 lb/ton10E12 Btu heat input	See ref. lists 21.3 pg/J for same boiler/coal type, represents both gaseous and particulate POM	114
Polycyclic organic matter			Coal combustion	Anthracite coal-fired underfeed stoker, commercial/residential	10300102	22.26 lb/10E12 Btu heat input	See ref. also lists 68.4 pg/J for same boiler/coal type, represents both gaseous & particulate POM	114
Polycyclic organic matter			Coal combustion	Bituminous coal-fired hand stoked boiler, commercial/industrial	10300214	4,273 lb/10E12 Btu heat input	Represents both gaseous and particulate POM	114
Polycyclic organic matter			Coal combustion	Bituminous coal-fired magazine feed, commercial/residential	103002	2,632 lb/10E12 Btu heat input	See ref. also lists 3524 pg/J for same boiler/coal type, represents both gaseous & particulate POM	114
Polycyclic organic matter			Coal combustion	Bituminous coal-fired underfeed stoker, commercial/residential	10300208	394.2 lb/10E12 Btu heat input	See ref. also lists 1501 pg/J for same boiler/coal type, both represent particulate & gaseous POM	114
Polycyclic organic matter			Coal combustion	Bituminous coal-fired underfeed stoker, commercial/residential	10300208	4,042 lb/10E12 Btu heat input	Represents both gaseous and particulate POM	114
Polycyclic organic matter			Coal combustion	High-volatile bituminous coal-fired underfeed stoker, commerc/resident	10300208	9,446 lb/10E12 Btu heat input	Average of 6 values ranging from 343-9767 pg/J, represents both gaseous and particulate POM	114
Polycyclic organic matter			Coal combustion	Processed lignite char underfeed stoker, commercial/residential	10300307	373.3 lb/10E12 Btu heat input	Represents both gaseous and particulate POM	114
Polycyclic organic matter			Coal combustion	Subbituminous coal-fired underfeed stoker, commercial/residential	10300224	1,956 lb/10E12 Btu heat input	Average of 8 values ranging from 607-925 pg/J, represents both gaseous and particulate POM	114
Polycyclic organic matter			Coal combustion, industrial	Bituminous coal-fired pulverized dry bottom, water tube boilers	10300202	2.78 lb/10E12 Btu	Multicyclones, represents primarily particulate POM	114

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Polycyclic organic matter			Coal combustion, industrial	Bituminous coal-fired pulverized wet bottom boilers	10200201	6.49 lb/10E12 Btu	Cyclones/ESP, represents both gaseous and particulate POM	114
Polycyclic organic matter			Coal combustion, industrial	Dry bottom, horizontally-fired, pulverized bituminous coal	10200201	120.8 lb/10E12 Btu	ESP, represents both gaseous and particulate POM	114
Polycyclic organic matter			Coal combustion, industrial	Mass-fired overfeed stoker, bituminous coal	10200209	32.92 lb/10E12 Btu	Uncontrolled, represents both gaseous and particulate POM	114
Polycyclic organic matter			Coal combustion, industrial	Spreader stoker	10200204	3.014 lb/10E12 Btu	Multiclones, coal type not given, represents mostly particulate POM	114
Polycyclic organic matter			Coal combustion, industrial	Underfeed stoker	10200206	196.4 lb/10E12 Btu	Uncontrolled, coal type not given, represents mostly particulate POM	114
Polycyclic organic matter			Coal combustion, industrial	Watertube, pulverized bituminous coal	10200202	67.94 lb/10E12 Btu	ESP, represents both gaseous and particulate POM	114
Polycyclic organic matter			Natural gas combustion	Double shell boilers, home heating		1.113 lb/10E12 Btu heat input	Represents primarily particulate POM, uncontrolled	114
Polycyclic organic matter			Natural gas combustion	Firetube boiler, process heater	10200401	0.649 lb/10E12 Btu heat input	Represents primarily particulate POM, uncontrolled	114
Polycyclic organic matter			Natural gas combustion	Hot air furnace, home heating		0.765 lb/10E12 Btu heat input	Represents primarily particulate POM, uncontrolled	114
Polycyclic organic matter			Natural gas combustion	Scotch marine, hospital heating	10200401	43.9 lb/10E12 Btu heat input	Represents primarily particulate POM, uncontrolled	114
Polycyclic organic matter			Natural gas combustion	Wall space heater, home heating		43.77 lb/10E12 Btu heat input	Represents primarily particulate POM, uncontrolled	114
Polycyclic organic matter			Oil combustion	Cast iron sectional boilers, distillate oil	10300501	34.8 lb/10E12 Btu	Uncontrolled, home heating application	114
Polycyclic organic matter			Oil combustion	Distillate watertube boilers	10300501	0.278 lb/10E12 Btu heat input	Uncontrolled	114
Polycyclic organic matter			Oil combustion	Hot air furnace, distillate oil	10300501	0.324 lb/10E12 Btu	Uncontrolled, same reference also lists <15.4 for same boiler/fuel type	114
Polycyclic organic matter			Oil combustion	Scotch marine boilers, distillate oil	10300501	41.04 lb/10E12 Btu	Uncontrolled	114
Polycyclic organic matter			Oil combustion, commercial	Scotch marine boilers, residual oil	10300401	2.203 lb/10E12 Btu heat input	Uncontrolled, represents benzo(a)pyrene only	114

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Polycyclic organic matter			Oil combustion, industrial	Steam atomized watertube, residual oil	10200401	5.33 lb/10E12 Btu heat input	Uncontrolled, represents mostly particulate POM	114
Polycyclic organic matter			Oil combustion, industrial	Watertube, residual oil	10200401	1.46 lb/10E12 Btu heat input	Uncontrolled, represents both gaseous and particulate POM	114
Polycyclic organic matter			Oil combustion, utility	Face-fired, residual oil	10100401	0.858 lb/10E12 Btu heat input	Uncontrolled, represents both gaseous and particulate POM	114
Polycyclic organic matter			Oil combustion, utility	Tangential-fired, residual oil	10100404	5.79 lb/10E12 Btu heat input	Cyclone controls, represents both gaseous and particulate POM	114
Polycyclic organic matter			Oil combustion, utility	Wall-fired, residual oil	10100401	9.04 lb/10E12 Btu heat input	Uncontrolled, ave. of 4 values ranging from 0.45-12.3 ng/J, represents gaseous & particulate POM	114
Polycyclic organic matter			Open burning	Automobile body burning	50300203	0.22 lb/ton waste	Based on concentration measured in smoke plume	114
Polycyclic organic matter			Open burning	Automobile tire burning	50300203	0.48 lb/ton waste	Based on concentration measured in smoke plume	114
Polycyclic organic matter			Open burning	Grass, leaves, branches	50300201	0.005 - 0.0184 lb/ton waste	Based on concentration measured in smoke plume	114
Polycyclic organic matter			Open burning	Leaf burning	50300201	0.02 - 0.044 lb/ton leaves	Based on lab tests	114
Polycyclic organic matter			Open burning	Municipal refuse open burning	50300202	0.001 - 0.0094 lb/ton waste	Based on concentration measured in smoke plume	114
Polycyclic organic matter			Wood combustion	Industrial stick burner boiler, white oak and mixed logs, ind/commerc	10200903	0.156 lb/ton wood burned	Uncontrolled, ave. of 3 values ranging 0.013-0.174 lb/ton, represents both gaseous & particulate POM	114
Polycyclic organic matter			Wood combustion	Industrial/commercial hot water boiler, hardwood chips	10200901	0.0038 lb/ton dry fuel burned	Multiclone, represents both gaseous and particulate POM	114
Polycyclic organic matter			Wood combustion	Industrial/commercial spreader stoker, bark	10200901	0.032 lb/10E12 Btu heat input	Cyclones, represents both gaseous and particulate POM	114
Polycyclic organic matter			Wood combustion, industrial	Fluidized bed, green bark	10200903	0.0023 lb/ton dry wood burned	Multicyclone, represents both gaseous and particulate POM, average of 3 (0.0014 - 0.00311 lb/ton)	114
Polycyclic organic matter			Wood combustion, industrial	Horizontal return tube boiler, green ash	10200903	0.0046 lb/ton dry wood burned	Uncontrolled, represents both gaseous and particulate POM, average of 3 values (0.0032-0.0062)	114
Polycyclic organic matter			Wood combustion, industrial	Horizontal return tube, dry hardwood	10200903	1.4 x 10E-4 lb/ton dry wood burned	Multicyclone, represents both gaseous and particulate POM, average of 0.00024, 4 x 10E-5 lb/ton	114
Polycyclic organic matter			Wood combustion, industrial	Horizontal return tube, dry hardwood	10200903	0.0014 lb/ton dry wood burned	Uncontrolled, represents both gaseous and particulate POM, average of 3, 0.00044 - 0.00192 lb/ton	114

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Polycyclic organic matter			Wood combustion, industrial	Horizontal return tube, green pine/sawdust/bark	10200903	0.00128 lb/ton dry wood burned	Uncontrolled, represents gaseous & particulate POM, ref. also lists 0.00846 for same boiler/fuel	114
Polycyclic organic matter			Wood combustion, industrial	Underfeed stoker, dry hardwood	10200903	0.00606 lb/ton dry wood burned	Multicyclone, represents both gaseous and particulate POM, average of 0.00456 - 0.00694 lb/ton	114
Polycyclic organic matter			Wood combustion, industrial	Watertube, dry oak	10200903	0.0044 lb/ton dry wood burned	Multiclone, represents both gaseous and particulate POM (average of 0.00228, 0.00664 lb/ton)	114
Polycyclic organic matter			Wood combustion, industrial	Watertube, green sawdust	10200903	0.00166 lb/ton dry wood burned	Multiclone, represents both gaseous and particulate POM, average of 0.00172, 0.00158 lb/ton	114
Polycyclic organic matter			Wood combustion, residential	Baffled catalytic woodstove		0.3264 lb/ton fuel burned	Uncontrolled, represents both gaseous and particulate POM, but all were found in gaseous phase	114
Polycyclic organic matter			Wood combustion, residential	Baffled woodstove		0.5834 lb/ton fuel burned	Uncontrolled, represents both gaseous and particulate emissions, average of 2 values	114
Polycyclic organic matter			Wood combustion, residential	Fireplace		0.065 lb/ton fuel burned	Uncontrolled, represents both gaseous and particulate POM, average of 3 values	114
Polycyclic organic matter			Wood combustion, residential	Fireplace		3.8 x 10E-5 lb/ton fuel burned	Uncontrolled, represents only particulate POM, average of 3 values	114
Polycyclic organic matter			Wood combustion, residential	Fluidized bed furnace, pine wood chips		0.3036 lb/ton fuel burned	Baghouse, represents both gaseous and particulate POM, average of 2 values	114
Polycyclic organic matter			Wood combustion, residential	Fluidized bed furnace, pine wood chips		0.6074 lb/ton fuel burned	Uncontrolled, represents both gaseous and particulate POM, average of 2 values	114
Polycyclic organic matter			Wood combustion, residential	Nonbaffled catalytic woodstove		0.0944 lb/ton fuel burned	Uncontrolled, represents both gaseous and particulate POM, but all were found in gaseous phase	114
Polycyclic organic matter			Wood combustion, residential	Nonbaffled catalytic woodstove		0.4034 lb/ton fuel burned	Uncontrolled, represents both gaseous and particulate POM, but all were found in gaseous phase	114
Polycyclic organic matter			Wood combustion, residential	Nonbaffled woodstove		0.3922 lb/ton fuel burned	Uncontrolled, represents both gaseous and particulate POM, average of 4 values	114
Polycyclic organic matter			Wood combustion, residential	Small airtight woodstoves, birch wood		0.0418 lb/ton dry fuel burned	Normal high-temperature burning conditions, based on emission tests	57
Polycyclic organic matter			Wood combustion, residential	Small airtight woodstoves, birch wood		0.0402 lb/ton dry fuel burned	Starved air conditions, based on emission tests	57
Polycyclic organic matter			Wood combustion, residential	Small airtight woodstoves, spruce wood		0.0052 lb/ton dry fuel burned	Normal high-temperature burning conditions, based on emission tests	57
Polycyclic organic matter			Wood combustion, residential	Small airtight woodstoves, spruce wood		0.0646 lb/ton dry fuel burned	Normal high-temperature burning conditions, based on emission tests	57

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Polycyclic organic matter			Wood combustion, residential	Woodstove with secondary combustion		0.1494 lb/ton fuel burned	Uncontrolled, represents both gaseous and particulate POM, but all were found in gaseous phase	114
Polycyclic organic matter		0133	Bagasse combustion	Industrial boilers	10201101	179.7 lb/10E12 Btu heat input	2 boilers each w/ multicyclone vented to 1 common stack. Represents both gaseous & particulate POM	114
Polycyclic organic matter		0133	Bagasse combustion	Industrial boilers	10201101	99.9 lb/10E12 Btu heat input	Average of 2 (17.2-68.9), multicyclone, represents both gaseous and particulate POM.	114
Polycyclic organic matter		0851	Controlled/prescribed burning	Backing fire, 0.1 lb/ft2		27.96 lb/ton TSP emitted	Lab tests of burning pine needles	114
Polycyclic organic matter		0851	Controlled/prescribed burning	Backing fire, 0.31 lb/ft2		12.51 lb/ton TSP emitted	Lab tests of burning pine needles	114
Polycyclic organic matter		0851	Controlled/prescribed burning	Backing fire, 0.49 lb/ft2		8.17 lb/ton TSP emitted	Lab tests of burning pine needles	114
Polycyclic organic matter		0851	Controlled/prescribed burning	Heading fire, 0.1 lb/ft2		1.75 lb/ton TSP emitted	Lab tests of burning pine needles	114
Polycyclic organic matter		0851	Controlled/prescribed burning	Heading fire, 0.31 lb/ft2		0.8 lb/ton TSP emitted	Lab tests of burning pine needles	114
Polycyclic organic matter		0851	Controlled/prescribed burning	Heading fire, 0.49 lb/ft2		0.78 lb/ton TSP emitted	Lab tests of burning pine needles	114
Polycyclic organic matter		1311	Oil shale retorting	Modified in situ retort		0.0073 lb/hr	Based on offgas concentration and flow rate	114
Polycyclic organic matter		2861	Charcoal manufacture	Missouri-type batch kiln	30100403	0.007 lb/ton charcoal produced	Uncontrolled, average of 5 tests	114
Polycyclic organic matter		2895	Carbon black manufacture	Product recovery baghouse on main process vent	30100504	0.0038 lb/ton carbon black produced	Uncontrolled, average of 3 tests, both gaseous and particulate POM	114
Polycyclic organic matter		2951	Asphalt (hot mix) production	Batch mix plant, rotary dryer and mixer	30500201	3.94 x 10E-5 lb/ton asphalt produced	Cyclone and wet scrubber, virgin feed material	114
Polycyclic organic matter		2951	Asphalt (hot mix) production	Drum mix plant	30500205	7.18 x 10E-5 lb/ton asphalt produced	Knock out box, using recycled feed	114
Polycyclic organic matter		2951	Asphalt (hot mix) production	Drum mix plant	30500205	3.38 x 10E-5 lb/ton asphalt produced	Knock out box and venturi scrubber, using recycled feed	114
Polycyclic organic matter		2951	Asphalt (hot mix) production	Drum mix plant	30500205	4.42 x 10E-5 lb/ton asphalt produced	Knock out box	114
Polycyclic organic matter		2951	Asphalt (hot mix) production	Drum mix plant	30500205	2.7 x 10E-8 lb/ton asphalt produced	Knock out box and venturi scrubber	114
Polycyclic organic matter		2952	Asphalt roofing material production	Asphalt blowing still	30500101	0.0304 lb/ton asphalt blown	Uncontrolled	114

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Polycyclic organic matter		2952	Asphalt roofing material production	Asphalt blowing still	30500101	9.6 x 10E-5 lb/ton asphalt blown	Afterburner	114
Polycyclic organic matter		2952	Asphalt roofing material production	Asphalt blowing still	30500101	4.2 x 10E-4 lb/ton asphalt blown	Fume incinerator	114
Polycyclic organic matter		2952	Asphalt roofing material production	Asphalt blowing still	30500101	1.16 x 10E-5 lb/ton asphalt blown	Process heater furnace	114
Polycyclic organic matter		2952	Asphalt roofing material production	Asphalt blowing still	30500101	0.0096 lb/ton asphalt blown	Stack baffles, represents particulate POM	114
Polycyclic organic matter		2952	Asphalt roofing material production	Saturator	30500103	4.2 x 10E-4 lb/ton produced	Uncontrolled	114
Polycyclic organic matter		2952	Asphalt roofing material production	Saturator	30500103	1.92 x 10E-4 lb/ton produced	ESP controlled	114
Polycyclic organic matter		2952	Asphalt roofing material production	Saturator	30500103	6.6 x 10E-4 lb/ton produced	Uncontrolled	114
Polycyclic organic matter		2952	Asphalt roofing material production	Saturator and asphalt storage tanks	30500103	0.042 lb/ton produced	High velocity air filter	114
Polycyclic organic matter		33	Ferroalloy production	Electric arc furnace, sealed, silicomanganese	30300609	00.0022 lb/Mw-hr energy consumed by furnace	High pressure drop, wet scrubber represents gaseous and particulate POM	114
Polycyclic organic matter		3312	Coke production, by-product recovery process	By-product recovery, tar processing - decanter	30300315	0.0082 lb/ton coal fed to coking oven	Uncontrolled, represents both gaseous and particulate POM	114
Polycyclic organic matter		3312	Coke production, by-product recovery process	By-product recovery, tar processing - dewatering and storage	30300315	6 x 10E-6 lb/ton coal fed to coking oven	Uncontrolled, represents both gaseous and particulate POM	114
Polycyclic organic matter		3312	Coke production, by-product recovery process	By-product recovery, tar processing - distillation product storage	30300315	2.2 x 10E-5 lb/ton coal fed to coking ov	Uncontrolled, represents both gaseous and particulate POM	114
Polycyclic organic matter		3312	Coke production, by-product recovery process	Slot oven coking - coke quenching	30300304	0.0037 lb/ton coal charged	Clean water quench	114
Polycyclic organic matter		3312	Coke production, by-product recovery process	Slot oven coking - coke quenching	30300304	1.226 lb/ton coal charged	Contaminated water used for quench	114
Polycyclic organic matter		3312	Coke production, by-product recovery process	Slot oven coking - door leaks	30300308	9524 mg/Nm3	Uncontrolled, average of 4 test runs	114

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Polycyclic organic matter		3312	Coke production, by-product recovery process	Slot oven coking - door leaks	30300308	1256 ng/Nm3	Wet ESP	114
Polycyclic organic matter		3312	Coke production, by-product recovery process	Slot oven coking - door leaks	30300308	1.4 x 10E-7 lb/ton coal charged	Wet ESP	114
Polycyclic organic matter		3313	Ferroalloy production	Electric arc furnace, sealed, ferromanganese	30300701	0.343 lb/Mw-hr energy consumed by furnace	Uncontrolled, represents gaseous and particulate POM	114
Polycyclic organic matter		3313	Ferroalloy production	Electric arc furnace, seal-sealed, ferrosilicon	30300702	0.2002 lb/Mw-hr energy consumed by furnace	Low energy wet scrubber, represents gaseous and particulate POM	114
Polycyclic organic matter		3334	Primary aluminum smelting	Anode paste process - elser	303001	579 ng/m3	Uncontrolled	114
Polycyclic organic matter		3334	Primary aluminum smelting	Anode paste process - pitch matter	303001	2752 ng/m3	Uncontrolled	114
Polycyclic organic matter		3334	Primary aluminum smelting	Anode paste process - briquetting	303001	9.2 ng/m3	Uncontrolled	114
Polycyclic organic matter		3334	Primary aluminum smelting	Horizontal Soderberg pot room - pot gas scrubber	30300102	2.04 lb/ton Al		114
Polycyclic organic matter		3334	Primary aluminum smelting	Vertical Soderberg pot room - pot gas dry scrubber	30300103	0.002 lb/ton Al		114
Polycyclic organic matter		3334	Primary aluminum smelting	Vertical Soderberg pot room - scrubber for ventilation air	30300103	0.08 lb/ton Al		114
Polycyclic organic matter		3341	Secondary lead smelting	Secondary smelter	30400403	1107 ng/Nm3	Controlled, device not specified, average of 4 tests, smelter processing batteries	114
Polycyclic organic matter		4911	Coal combustion, utility	Bituminous coal-fired cyclone utility boiler	10100203	2.040 lb/10E12 Btu heat input	ESP, represents both gaseous and particulate POM	114
Polycyclic organic matter		4911	Coal combustion, utility	Bituminous coal-fired cyclone utility boiler	10100203	14.2 lb/10E12 Btu heat input	Wet scrubber, represents both particulate and gaseous POM	114
Polycyclic organic matter		4911	Coal combustion, utility	Bituminous coal-fired pulverized dry bottom boilers	10100202	0.93 lb/10E12 Btu	Wet scrubber, represents both gaseous and particulate POM	114
Polycyclic organic matter		4911	Coal combustion, utility	Bituminous coal-fired pulverized dry bottom boilers	10100202	10.0 lb/10E12 Btu	Multiclone/ESP, represents both gaseous and particulate POM	114

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Polycyclic organic matter		4911	Coal combustion, utility	Bituminous coal-fired pulverized wet bottom boilers	10100201	18.5 lb/10E12 Btu	ESP, represents both gaseous and particulate POM	114
Polycyclic organic matter		4911	Coal combustion, utility	Bituminous coal-fired pulverized wet bottom boilers	10100201	563.7 lb/10E12 Btu	Wet scrubber, represents both gaseous and particulate POM	114
Polycyclic organic matter		4911	Coal combustion, utility	Front wall-fired boilers, pulverized bituminous coal	10100201	1.69 lb/10E12 Btu heat input	ESP, represents both gaseous and particulate POM	114
Polycyclic organic matter		4911	Coal combustion, utility	Lignite coal-fired spreader stoker boilers, util/cogenerc/industr	10100306	14.6 lb/10E12 Btu	Multiclone, represents both gaseous and particulate POM	114
Polycyclic organic matter		4911	Coal combustion, utility	Pulverized dry bottom, tangentially fired boilers	10100212	2.20 lb/10E12 Btu heat input	Multiclone/ESP, represents mostly particulate POM	114
Polycyclic organic matter		4911	Coal combustion, utility	Pulverized dry bottom, vertically fired boilers	10100202	0.742 - 9.73 lb/10E12 Btu	Uncontrolled, represents mostly particulate POM	114
Polycyclic organic matter		4911	Coal combustion, utility	Pulverized dry bottom, vertically fired boilers	10100202	0.695 - 1.62 lb/10E12 Btu heat input	Multiclone/ESP, represents mostly particulate POM	114
Polycyclic organic matter		4911	Coal combustion, utility	Stoker spreader, traveling grate	10100209	0.125 - 0.463 lb/10E12 Btu heat input	Multiclone, coal type not reported, represents mostly particulate POM	114
Polycyclic organic matter		4911	Coal combustion, utility	Tangentially-fired boilers, pulverized subbituminous	10100226	0.695 lb/10E12 Btu heat input	ESP controlled, represents both particulate and gaseous POM	114
Polycyclic organic matter		4911	Coal combustion, utility	Vertically fired boilers, pulverized subbituminous	10100201	6.49 lb/10E12 Btu heat input	ESP controlled, represents both particulate and gaseous POM	114
Polycyclic organic matter		4953	Municipal waste combustion	Multiple chamber reciprocating stoker grate incinerator	50100101	6.26 x 10E-4 lb/ton waste burned	Uncontrolled, represents primarily particulate POM	114
Polycyclic organic matter		4953	Municipal waste combustion	Multiple chamber, reciprocating stoker grate	50100101	3.24 x 10E-5 lb/ton waste burned	Wet scrubber, represents particulate POM	114
Polycyclic organic matter		4953	Municipal waste combustion	Multiple chamber, reciprocating stoker grate	50100101	8.8 x 10E-6 lb/ton waste burned	ESP, represents particulate POM	114
Polycyclic organic matter		4953	Municipal waste combustion	Multiple chamber, reciprocating stoker grate	50100101	0.0126 lb/ton waste burned	ESP, represents both gaseous and particulate POM	114

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Polycyclic organic matter		4953	Municipal waste combustion	Multiple chamber, traveling grate incinerator	50100101	8.08 x 10E-5 lb/ton waste burned	Settling chamber is control device, represents primarily particulate POM	114
Polycyclic organic matter		4953	Municipal waste combustion	Rocking bar grate	50100101	3.64 x 10E-5 lb/ton waste burned	Wet scrubber and ESP, represents both gaseous and particulate POM	114
Polycyclic organic matter		4953	Solid waste incineration, commercial	Multiple chamber with auxilliary gas burner	50100101	0.044 lb/ton waste burned	Uncontrolled, represents particulate POM	114
Polycyclic organic matter		4953	Solid waste incineration, commercial	Single chamber incinerator	50100102	0.00417 lb/ton waste burned	Uncontrolled, represents particulate POM	114
Polycyclic organic matter		4953	Wastewater treatment	POTW	50100701	0-1998 lb/ton of POM in influent	Depends on comp., based on emis. model. for hypoth. POTW, repr. ave. POTW treat. indus. wastewater	60,61
Polycyclic organic matter		5032	Asphalt distribution/use	Entire process		0.0008 lb/ton asphalt applied	POM assumed to be 0.1% of THC	92
Polydimethyl siloxane	9016006	226	Woven fabric finishing	Tenter frames - resin finish	330001	0.0019 lb/ton fabric	Uncontrolled, one test	52
Potassium	7440097	25	Wood combustion, industrial	Horizontal return tube	10200906	556 lb/10E12 Btu heat input	Sample results, 1 plant, wood flowrate = .514 kg/s, boiler has 3-pass design w/flyash reinjection, uncontrolled	176
Potassium	7440097	25	Wood combustion, industrial	Balanced draft wickes stoker-fired industrial boiler	10200906	0.0132 lb/ton fuel or >858 lb/10E12 Btu	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 kg/s, boil. eff. 55.3%	177
Potassium	7440097	25	Wood combustion, industrial	Balanced draft wickes stoker-fired industrial boiler	10200906	0.028 lb/ton fuel or >2,551 lb/10E12 Btu	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.54 kg/s, boil. eff. 61.3%	177
1,2-Propadiene	463490	2869	Acetic anhydride production	Reaction by-product gas	30113302	3.8 lb/ton acetic anhydride produced	Based on data from three plants	152
Propane	74986	2869	Acrylonitrile production - SOHIO process	Absorber vent	30125406	121.4 lb/ton acrylonitrile produced	Uncontrolled, based on data from plants and EPA studies	149
Propane	74986	2895	Carbon black manufacture - oil furnace	Main process purge vent	30100504	0.46 lb/ton carbon black produced	Based on test data	97
Propane	74986	806	Hospital waste incineration	Incinerator	315020	<0.024 lb/ton feed	Uncontrolled, test data	167
Propanol	71238	2865	Acetone/phenol manufacture from cumene	Cumene peroxidation vent	[illegible]	0.022 lb/ton phenol	Controlled (unspecified), based on test data, 1977 data, average factors	125
Propionaldehyde	123386		Wood combustion, residential	Woodstove		0.3 lb/ton wood	Uncontrolled, average emission factor based on source tests	58

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Propyl benzene	103651		Scrap tire, open burning	Tires in experimental burn hut		0.369 lb/ton tire	EAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.3 kg/hr, uncontrolled	212
Propyl benzene	103651		Scrap tire, open burning	Tires in experimental burn hut		0.502 lb/ton tire	EAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr, uncontrolled	212
Propyl benzene	103651		Scrap tire, open burning	Tires in experimental burn hut		0.120 lb/ton tire	VOST samples burn rate = 1.5 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Propyl benzene	103651		Scrap tire, open burning	Tires in experimental burn hut		0.041 lb/ton tire	VOST samples burn rate = 2.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Propyl benzene	103651		Scrap tire, open burning	Tires in experimental burn hut		0.149 lb/ton tire	VOST samples burn rate = 0.9 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Propyl benzene	103651		Scrap tire, open burning	Tires in experimental burn hut		0.116 lb/ton tire	VOST samples burn rate = 1.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Propyl benzene	103651		Scrap tire, open burning	Tires in experimental burn hut		0.148 lb/ton tire	VOST samples burn rate = 1.4 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Propyl benzene	103651		Scrap tire, open burning	Tires in experimental burn hut		0.425 lb/ton tire	VOST samples burn rate = 0.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Propyl benzene	103651		Scrap tire, open burning	Tires in experimental burn hut		0.699 lb/ton tire	VOST samples burn rate = 0.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Propyl benzene	103651		Scrap tire, open burning	Tires in experimental burn hut		0.070 lb/ton tire	VOST samples burn rate = 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Propyl benzene	103651		Scrap tire, open burning	Tires in experimental burn hut		0.064 lb/ton tire	VOST samples burn rate = 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Propyl benzene	103651		Scrap tire, open burning	Tires in experimental burn hut		0.010 lb/ton tire	VOST samples burn rate = 2.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Propyl benzene	103651		Scrap tire, open burning	Tires in experimental burn hut		0.006 lb/ton tire	VOST samples burn rate = 6.63 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Propylene	115071	2821	Polyvinyl chloride production	Suspension process, entire plant	30101801	1.4 x 10E-4 lb/ton PVC	Based on a model plant, 1978 data, 1.5 x 10E8 lb capacity, control status not certain	138
Propylene	115071	2869	Cumene production	Entire process	30115601	0.34 lb/ton cumene	Controlled, engineering judgement, based on ratio of propane emissions (1:2 propylic:propane)	90
Propylene	115071	2869	Acrylic acid production	Entire process	30113221	0.9 lb/ton acrylic acid produced	Controlled (98% incin.), engineering judgement, ratio propane emissions	90
Propylene	115071	2869	Acrylonitrile production	Absorber	30129406	1.3 lb/ton acrylonitrile produced	Incinerator control, assumed 98% efficient	85

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Propylene	115071	2869	Acrylonitrile production	Columns	30125408	6 lb/ton acrylonitrile produced	Uncontrolled, based on test data and engineering judgement	85
Propylene	115071	2869	Acrylonitrile production	Columns	30125408	0.12 lb/ton acrylonitrile	Incinerator control, assumed 98% efficient	85
Propylene	115071	2869	Acrylonitrile production - SOHIO process	Absorber vent	30125404	60.0 lb/ton acrylonitrile produced	Uncontrolled, based on data from plants and EPA studies	149
Propylene	115071	2869	Isopropyl alcohol production	Entire process	301250	0.014 lb/ton isopropyl alcohol	Engineering judgement, based on 4189 lb/yr emitted and 5.73 x 10E8 lb/yr production	87
Propylene	115071	2869	Propylene oxide production	Chlorohydrination process, entire process	30120502	16 lb/ton PO produced	Uncontrolled, based on test data and engineering judgement, assume all C3 is propylene	84
Propylene	115071	2869	Propylene oxide production	Peroxidation process, entire process	301205	0.98 lb/ton PO produced	Uncontrolled, based on test data and engineering judgement, assume all C3 is propylene	84
Propylene	115071	5541	Gasoline marketing activities	Vehicle refueling, vapor loss	40600301	0.0 lb/gal of gas pumped	Listed as propylene/propane emission rate	4
Propylene	115071	806	Hospital waste incineration	Incinerator	319020	<0.022 lb/ton feed	Uncontrolled, test data	167
Propylene oxide	75569		Fumigation or sterilization	Retort operation		470 lb/sterilization event	Based on data for a facility using 18,336 lb PO/year, engineering judgement	24
Propylene oxide	75569	2869	Polyether polyol production	Fugitive emissions/equipment leaks	301250	4409 lb/yr	Based on VOC of 61729 lb/yr (8 pump seals in service) and 7.6 wt% PO in stream	24
Propylene oxide	75569	2869	Polyether polyol production	Process vents	301250	0.26 lb/ton PO consumed		24
Propylene oxide	75569	2869	Propylene glycol production	Fugitive emissions/equipment leaks	301250	37037 lb/yr	Based on VOC of 61729 lb/yr (8 pump seals in service) and 60 wt% PO in stream	24
Propylene oxide	75569	2869	Propylene glycol production	Process vents	301250	0.056 lb/ton PO consumed		24
Propylene oxide	75569	2869	Propylene oxide production	Fugitive emissions/equipment leaks	30120580	208337 lb/yr	Based on estimated VOC of 729729 lb/yr (91 pump seals in service) and 0.285 wt% PO in stream	24
Propylene oxide	75569	2869	Propylene oxide production	Storage tank emissions	407	0.042 lb/ton PO produced		24
Propylene oxide	75569	2869	Propylene oxide production by chlorohydrination	Condenser vent	301209	0.032 lb/ton propylene oxide produced	Based on VOC of 0.012 lb/ton and range of 89.9-100 wt% PO	24
Propylene oxide	75569	2869	Propylene oxide production by chlorohydrination	Reactor vent/saponification column	30120504	0.078 lb/ton propylene oxide produced	Based on VOC of 0.006 lb/ton and 90% (wt) PO	24

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Propylene oxide	75569	2869	Propylene oxide production, peroxidation process	Condenser vent	301205	0.0006 lb/ton propylene oxide produced	Based on weighted VOC average emissions and weight percents PO	24
Propylene oxide	75569	2869	Propylene oxide production, peroxidation process	Reactor vent/PO stripping	30120504	0.038 lb/ton propylene oxide produced		24
Pyrene	129000		Scrap tire, open burning	Tires in experimental burn hut		0.346 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter component, shred condition = 2" by 2" piece, burn rate=1.3 kg/hr, contolled	212
Pyrene	129000		Scrap tire, open burning	Tires in experimental burn hut		0.260 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter component, shred condition = 2" by 2" piece, burn rate=1.1 kg/hr, contolled	212
Pyrene	129000		Scrap tire, open burning	Tires in experimental burn hut		0.119 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter component, shred condition = 2" by 2" piece, burn rate=1.7 kg/hr, contolled	212
Pyrene	129000		Scrap tire, open burning	Tires in experimental burn hut		0.015 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter component, shred condition = 2" by 2" piece, burn rate=2.3 kg/hr, contolled	212
Pyrene	129000	25	Wood combustion, industrial	Horizontal return tube	10200906	4.6 x 10E-6 lb/ton fuel (dry basis)	Results of GC/MS analysis of xad-2 resin extract	176
Pyrene	129000	25	Wood combustion, industrial	Balanced draft wickes stoker-fired industrial boiler	10200906	1.3 x 10E-5 lb/ton fuel	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 kg/s, boil. eff. 55.3%	177
Pyrene	129000	25	Wood combustion, industrial	Balanced draft wickes stoker-fired industrial boiler	10200906	4.4 x 10E-6 lb/ton fuel	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.54 kg/s, boil. eff. 61.3%	177
Radionuclides		1094	Uranium mining	Ore loading, dumping		75 Ci Rn-222/g ore and sub-ore mined	Rough est, for avg lrg underground mine w/ ore grade = 0.1% triuranium octoxide	37
Radionuclides		1094	Uranium mining	Ore stockpile exhalation		265 Ci Rn-222/g ore and sub-ore mined	Rough est, for avg lrg underground mine w/ ore grade = 0.1% triuranium octoxide	37
Radionuclides		1094	Uranium mining	Reloading ore from stockpile		75 Ci Rn-222/g ore and sub-ore mined	Rough est, for avg lrg underground mine w/ ore grade = 0.1% triuranium octoxide	37
Radionuclides		1094	Uranium mining	Sub-ore loading, dumping		25 Ci Rn-222/g ore and sub-ore mined	Rough est, for avg lrg underground mine w/ ore grade = 0.1% triuranium octoxide	37
Radionuclides		1094	Uranium mining	Sub-ore stockpile exhalation		1690 Ci Rn-222/g ore and sub-ore mined	Rough est, for avg lrg underground mine w/ ore grade = 0.1% triuranium octoxide	37
Radionuclides		1094	Uranium mining	Underground uranium mines	30504010	0.004 - 0.19 Ci Rn-222/ton ore processed		35

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Radionuclides		1094	Uranium mining	Waste rock loading, dumping		0 Ci Rn-222/g waste rock produced	Rough est, for avg lrg underground mine w/ ore grade = 0.1% triuranium octoxide	37
Radionuclides		1094	Uranium mining	Waste rock pile exhalation		140 Ci Rn-222/g waste rock mined	Rough est, for avg lrg underground mine w/ ore grade = 0.1% triuranium octoxide	37
Radionuclides		1475	Phosphate rock processing	Dryer	30501901	5.2 nCi/metr. ton phosph. rock processed	Rough est, for dryer w/ low energy scrubber reless. 0.26 lb PM/ton rock processed	37
Radionuclides		1475	Phosphate rock processing	Grinder	30501902	1.0 nCi/metr. ton phosph. rock processed	Rough est, for dryer w/ low energy scrubber reless. 0.26 lb PM/ton rock processed	37
Radionuclides		1475	Phosphorus (elemental) production	Calciner stack	30501905	6.3 nCi/metr. ton phos. rock processed	Rough est, calciner control. w/ low energy scrub., emit. 0.50 lb PM/ton rock proc.	37
Radionuclides		1475	Phosphorus (elemental) production	Calciner stack	30501905	25 uCi Rn-222/Mg phos. rock processed	Rough est, calciner control. w/ low energy scrub., emit. 0.50 lb PM/ton rock processed	37
Radionuclides		1475	Phosphorus (elemental) production	Calciner stack	30501905	1.3 uCi Pb-210/Mg phos rock processed	Rough est, calciner control. w/ low energy scrub., emit. 0.50 lb PM/ton rock processed	37
Radionuclides		1475	Phosphorus (elemental) production	Calciner stack	30501905	2.5 uCi Po-210/Mg phos rock processed	Rough est, calciner control. w/ low energy scrub., emit. 0.50 lb PM/ton rock processed	37
Radionuclides		1475	Phosphorus (elemental) production	Non-calciner stack	305019	4.3 nCi/ metric ton phos. rock processed	Rough est., stacks emit 0.50 lb PM/ton phos. rock processed	37
Radionuclides		2874	Phosphate fertilizer manufacturing - wet process	Diammonium phosphate process	301030	9.8 nCi/metric ton fertilizer produced	Rough est, U-238,U-234,Th-230 from DAP controlled with venturi scrubber	37
Radionuclides		2874	Phosphate fertilizer manufacturing - wet process	Diammonium phosphate process	301030	0.82 nCi Ra-226/metr. ton fertil. prod.	Rough est, controlled w/ Venturi scrubber, emits 0.320 lb PM/ton fertilizer prod.	37
Radionuclides		2874	Phosphate fertilizer manufacturing - wet process	Diammonium phosphate process	301030	4.9 nCi Pb-210/metr. ton fertil. prod.	Rough est, controlled w/ Venturi scrubber, emits 0.320 lb PM/ton fertilizer prod.	37
Radionuclides		2874	Phosphate fertilizer manufacturing - wet process	Diammonium phosphate process	301030	4.9 nCi Po-210/metr. ton fertil. prod.	Rough est, controlled w/ Venturi scrubber, emits 0.320 lb PM/ton fertilizer prod.	37
Radionuclides		2874	Phosphate fertilizer manufacturing - wet process	Granular triple superphosphate process	301029	6.0 nCi/metric ton fertilizer produced	Rough est, U-238,U-234,Th-230 from GTSP controlled w/ Venturi scrubber	37
Radionuclides		2874	Phosphate fertilizer manufacturing - wet process	Granular triple superphosphate process	301029	2.0 nCi Ra-226/metric ton fertil. prod.	Rough est, controlled with Venturi scrubber, emitting 0.3 lb PM/ton fertil. prod.	37

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Radionuclides		2874	Phosphate fertilizer manufacturing - wet process	Granular triple superphosphate process	301029	3.0 nCi Pb-210/metric ton fertil. prod.	Rough est, controlled with Venturi scrubber, emitting 0.2 lb PM/ton fertil. prod.	37
Radionuclides		2874	Phosphate fertilizer manufacturing - wet process	Granular triple superphosphate process	301029	3.0 nCi Po-210/metric ton fertil. prod.	Rough est, controlled with Venturi scrubber, emitting 0.2 lb PM/ton fertil. prod.	37
Radionuclides		3331	Copper smelting	Entire process	303005	140 nCi U-238/metric ton Cu	Controlled with ESP and acid gas cleanup plant, rough est., reverberatory furnace, no roaster	37
Radionuclides		3331	Copper smelting	Entire process	303005	140 nCi U-234/metric ton Cu	Controlled with ESP and acid gas cleanup plant, rough est., reverberatory furnace, no roaster	37
Radionuclides		3331	Copper smelting	Entire process	303005	260 nCi Th-230/metric ton Cu	Controlled with ESP and acid gas cleanup plant, rough est., reverberatory furnace, no roaster	37
Radionuclides		3331	Copper smelting	Entire process	303005	23 nCi Ra-226/metric ton Cu	Controlled with ESP and acid gas cleanup plant, rough est., reverberatory furnace, no roaster	37
Radionuclides		3331	Copper smelting	Entire process	303005	2700 nCi Pb-210/metric ton Cu	Controlled with ESP and acid gas cleanup plant, rough est., reverberatory furnace, no roaster	37
Radionuclides		3331	Copper smelting	Entire process	303005	2700 nCi Po-210/metric ton Cu	Controlled with ESP and acid gas cleanup plant, rough est., reverberatory furnace, no roaster	37
Radionuclides		3331	Copper smelting	Entire process	303005	180 nCi Th-232/metric ton Cu	Controlled with ESP and acid gas cleanup plant, rough est., reverberatory furnace, no roaster	37
Radionuclides		3331	Copper smelting	Entire process	303005	180 nCi Ra-232/metric ton Cu	Controlled with ESP and acid gas cleanup plant, rough est., reverberatory furnace, no roaster	37
Radionuclides		3331	Copper smelting	Entire process	303005	180 nCi Th-228/metric ton Cu	Controlled with ESP and acid gas cleanup plant, rough est., reverberatory furnace, no roaster	37
Radionuclides		3331	Copper smelting	Entire process	303005	950 nCi U-238/metric ton Cu	Typical control = acid gas plant, cyclone, water spray, ESP, rough estimate	39
Radionuclides		3331	Copper smelting	Entire process	303005	950 nCi U-234/metric ton Cu	Typical control = acid gas plant, cyclone, water spray, ESP, rough estimate	39
Radionuclides		3331	Copper smelting	Entire process	303005	90 nCi Th-230/metric ton Cu	Typical control = acid gas plant, cyclone, water spray, ESP, rough estimate	39
Radionuclides		3331	Copper smelting	Entire process	303005	36 nCi Ra-226/metric ton Cu	Typical control = acid gas plant, cyclone, water spray, ESP, rough estimate	39
Radionuclides		3331	Copper smelting	Entire process	303005	1500 nCi Pb-210/metric ton Cu	Typical control = acid gas plant, cyclone, water spray, ESP, rough estimate	39
Radionuclides		3331	Copper smelting	Entire process	303005	710 nCi Po-210/metric ton Cu	Typical control = acid gas plant, cyclone, water spray, ESP, rough estimate	39

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Radionuclides		3331	Copper smelting	Entire process	303005	29 nCi Th-232/metric ton Cu	Typical control = acid gas plant, cyclone, water spray, ESP, rough estimate	39
Radionuclides		3331	Copper smelting	Entire process	303005	31 nCi Th-228/metric ton Cu	Typical control = acid gas plant, cyclone, water spray, ESP, rough estimate	39
Radionuclides		3334	Aluminum reduction	Anode bake plant	30300105	0.43 nCi U-238/metric ton Al	Controlled with fluidized-bed scrubber, rough est.	37
Radionuclides		3334	Aluminum reduction	Anode bake plant	30300105	0.43 nCi U-234/metric ton Al	Controlled with fluidized-bed scrubber, rough est.	37
Radionuclides		3334	Aluminum reduction	Anode bake plant	30300105	0.31 nCi Th-230/metric ton Al	Controlled with fluidized-bed scrubber, rough est.	37
Radionuclides		3334	Aluminum reduction	Anode bake plant	30300105	0.47 nCi Ra-226/metric ton Al	Controlled with fluidized-bed scrubber, rough est.	37
Radionuclides		3334	Aluminum reduction	Anode bake plant	30300105	1.6 nCi Pb-210/metric ton Al	Controlled with fluidized-bed scrubber, rough est.	37
Radionuclides		3334	Aluminum reduction	Anode bake plant	30300105	1.6 nCi Po-210/metric ton Al	Controlled with fluidized-bed scrubber, rough est.	37
Radionuclides		3334	Aluminum reduction	Anode bake plant	30300105	0.25 nCi Th-232/metric ton Al	Controlled with fluidized-bed scrubber, rough est.	37
Radionuclides		3334	Aluminum reduction	Anode bake plant	30300105	0.25 nCi Ra-228/metric ton Al	Controlled with fluidized-bed scrubber, rough est.	37
Radionuclides		3334	Aluminum reduction	Main stack	303001	67 nano Ci U-238/metric ton Al	Controlled with fluidized-bed scrubber, rough est.	37
Radionuclides		3334	Aluminum reduction	Main stack	303001	67 nano Ci U-234/metric ton Al	Controlled with fluidized-bed scrubber, rough est.	37
Radionuclides		3334	Aluminum reduction	Main stack	303001	140 nano Ci Th-230/metric ton Al	Controlled with fluidized-bed scrubber, rough est.	37
Radionuclides		3334	Aluminum reduction	Main stack	303001	23 nCi Ra-226/metric ton Al	Controlled with fluidized-bed scrubber, rough est.	37
Radionuclides		3334	Aluminum reduction	Main stack	303001	540 nCi Pb-210/metric ton Al	Controlled with fluidized-bed scrubber, rough est.	37
Radionuclides		3334	Aluminum reduction	Main stack	303001	540 nCi Po-210/metric ton Al	Controlled with fluidized-bed scrubber, rough est.	37
Radionuclides		3334	Aluminum reduction	Main stack	303001	110 nCi Th-232/metric ton Al	Controlled with fluidized-bed scrubber, rough est.	37

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Radionuclides		3334	Aluminum reduction	Main stack	303001	110 nCi Ra-228/metric ton Al	Controlled with fluidized-bed scrubber, rough est.	37
Radionuclides		3334	Aluminum reduction	Main stack	303001	530 pCi U-238/metric ton Al	Controlled with fluidized-bed scrubber, rough est., center-worked prebake cells	39
Radionuclides		3334	Aluminum reduction	Main stack	303001	530 pCi U-234/metric ton Al	Controlled with fluidized-bed scrubber, rough est., center-worked prebake cells	39
Radionuclides		3334	Aluminum reduction	Main stack	303001	1900 pCi Th-230/metric ton Al	Controlled with fluidized-bed scrubber, rough est., center-worked prebake cells	39
Radionuclides		3334	Aluminum reduction	Main stack	303001	430 pCi Ra-226/metric ton Al	Controlled with fluidized-bed scrubber, rough est., center-worked prebake cells	39
Radionuclides		3334	Aluminum reduction	Main stack	303001	2900 pCi Pb-210/metric ton Al	Controlled with fluidized-bed scrubber, rough est., center-worked prebake cells	39
Radionuclides		3334	Aluminum reduction	Main stack	303001	2100 pCi Po-210/metric ton Al	Controlled with fluidized-bed scrubber, rough est., center-worked prebake cells	39
Radionuclides		3339	Lead smelting	Entire process	303010	42 nCi U-238/metric ton Pb	Rough estimate, control - baghouse, fabric filter or ESP, and acid plant	39
Radionuclides		3339	Lead smelting	Entire process	303010	42 nCi U-234/metric ton Pb	Rough estimate, control - baghouse, fabric filter or ESP, and acid plant	39
Radionuclides		3339	Lead smelting	Entire process	303010	3.6 nCi Th-230/metric ton Pb	Rough estimate, control - baghouse, fabric filter or ESP, and acid plant	39
Radionuclides		3339	Lead smelting	Entire process	303010	2.9 nCi Ra-226/metric ton Pb	Rough estimate, control - baghouse, fabric filter or ESP, and acid plant	39
Radionuclides		3339	Lead smelting	Entire process	303010	130 nCi Pb-210/metric ton Pb	Rough estimate, control - baghouse, fabric filter or ESP, and acid plant	39
Radionuclides		3339	Lead smelting	Entire process	303010	100 nCi Po-210/metric ton Pb	Rough estimate, control - baghouse, fabric filter or ESP, and acid plant	39
Radionuclides		3339	Lead smelting	Entire process	303010	3.5 nCi Th-232/metric ton Pb	Rough estimate, control - baghouse, fabric filter or ESP, and acid plant	39
Radionuclides		3339	Lead smelting	Entire process	303010	3.5 nCi Th-238/metric ton Pb	Rough estimate, control - baghouse, fabric filter or ESP, and acid plant	39
Radionuclides		3339	Primary zinc smelting	Entire process	303030	9.0 nCi U-238/metric ton Zn	Rough estimate, electrolytic reduction controlled with cyclone and SO2 plant	39
Radionuclides		3339	Primary zinc smelting	Entire process	303030	9.3 nCi U-234/metric ton Zn	Rough estimate, electrolytic reduction controlled with cyclone and SO2 plant	39

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Radionuclides		3339	Primary zinc smelting	Entire process	303030	20 nCi Th-230/metric ton In	Rough estimate, electrolytic reduction controlled with cyclone and SO2 plant	39
Radionuclides		3339	Primary zinc smelting	Entire process	303030	44 nCi Ra-226/metric ton In	Rough estimate, electrolytic reduction controlled with cyclone and SO2 plant	39
Radionuclides		3339	Primary zinc smelting	Entire process	303030	4000 nCi Rn-222/metric ton In	Rough estimate, electrolytic reduction controlled with cyclone and SO2 plant	39
Radionuclides		3339	Primary zinc smelting	Entire process	303030	360 nCi Pb-210/metric ton In	Rough estimate, electrolytic reduction controlled with cyclone and SO2 plant	39
Radionuclides		3339	Primary zinc smelting	Entire process	303030	21 nCi Po-210/metric ton In	Rough estimate, electrolytic reduction controlled with cyclone and SO2 plant	39
Radionuclides		3339	Primary zinc smelting	Entire process	303030	4.8 nCi Th-232/metric ton	Rough estimate, electrolytic reduction controlled with cyclone and SO2 plant	39
Radionuclides		3339	Primary zinc smelting	Entire process	303030	4.8 nCi Th-228/metric ton	Rough estimate, electrolytic reduction controlled with cyclone and SO2 plant	39
Radionuclides		3339	Primary zinc smelting	Entire process	303030	3.7 nCi U-238/metric ton In	Rough estimate, electrolytic reduction, controlled with cyclones, ESP, and SO2 plant	37
Radionuclides		3339	Primary zinc smelting	Entire process	303030	3.7 nCi U-234/metric ton In	Rough estimate, electrolytic reduction, controlled with cyclones, ESP, and SO2 plant	37
Radionuclides		3339	Primary zinc smelting	Entire process	303030	1.8 nCi Th-230/metric ton In	Rough estimate, electrolytic reduction, controlled with cyclones, ESP, and SO2 plant	37
Radionuclides		3339	Primary zinc smelting	Entire process	303030	2.7 nCi Ra-226/metric ton In	Rough estimate, electrolytic reduction, controlled with cyclones, ESP, and SO2 plant	37
Radionuclides		3339	Primary zinc smelting	Entire process	303030	9.2 nCi Pb-210/metric ton In	Rough estimate, electrolytic reduction, controlled with cyclones, ESP, and SO2 plant	37
Radionuclides		3339	Primary zinc smelting	Entire process	303030	0.92 nCi Po-210/metric ton In	Rough estimate, electrolytic reduction, controlled with cyclones, ESP, and SO2 plant	37
Radionuclides		3339	Primary zinc smelting	Entire process	303030	1.1 nCi Th-232/metric ton In	Rough estimate, electrolytic reduction, controlled with cyclones, ESP, and SO2 plant	37
Radionuclides		3339	Primary zinc smelting	Entire process	303030	1.1 nCi Ra-228/metric ton In	Rough estimate, electrolytic reduction, controlled with cyclones, ESP, and SO2 plant	37
Radionuclides		3339	Primary zinc smelting	Entire process	303030	110 nCi U-238/metric ton In	Rough estimate, controlled with baghouse, fabric filter, acid plant	37
Radionuclides		3339	Primary zinc smelting	Entire process	303030	110 nCi U-234/metric ton In	Rough estimate, controlled with baghouse, fabric filter, acid plant	37

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Radionuclides		3339	Primary zinc smelting	Entire process	303030	96 nCi Th-230/metric ton Zn	Rough estimate, controlled with baghouse, fabric filter, acid plant	37
Radionuclides		3339	Primary zinc smelting	Entire process	303030	83 nCi Ra-226/metric ton Zn	Rough estimate, controlled with baghouse, fabric filter, acid plant	37
Radionuclides		3339	Primary zinc smelting	Entire process	303030	270 nCi Pb-210/metric ton Zn	Rough estimate, controlled with baghouse, fabric filter, acid plant	37
Radionuclides		3339	Primary zinc smelting	Entire process	303030	270 nCi Po-210/metric ton Zn	Rough estimate, controlled with baghouse, fabric filter, acid plant	37
Radionuclides		3339	Primary zinc smelting	Entire process	303030	45 nCi Th-232/metric ton Zn	Rough estimate, controlled with baghouse, fabric filter, acid plant	37
Radionuclides		3339	Primary zinc smelting	Entire process	303030	45 nCi Ra-228/metric ton Zn	Rough estimate, controlled with baghouse, fabric filter, acid plant	37
Radionuclides		4911	Coal combustion	Cyclone utility boiler	101	68.0 pCi U-238/10E6 Btu	Controlled with ESP	36
Radionuclides		4911	Coal combustion	Cyclone utility boiler	101	1797.8 pCi U-238/10E6 Btu	Controlled with scrubber, range = 301.2 - 3214.3 pCi U-238/10E6 Btu	36
Radionuclides		4911	Coal combustion	Cyclone utility boiler	101	40.8 pCi Th-232/10E6 Btu	Controlled with ESP	36
Radionuclides		4911	Coal combustion	Cyclone utility boiler	101	170.0 pCi Th-232/10E6 Btu	Controlled with scrubber, range 110.2-229.7 pCi Th-232/10E6 Btu	36
Radionuclides		4911	Coal combustion	Cyclone utility boiler	101	1.8 pCi U-238/g of PM emitted	Controlled with ESP, range 0.005-3.0 pCi U-238/g PM emitted	36
Radionuclides		4911	Coal combustion	Cyclone utility boiler	101	13.9 pCi U-238/g of PM emitted	Controlled with scrubber, range 0.017-37.5 pCi U-238/g PM emitted	36
Radionuclides		4911	Coal combustion	Cyclone utility boiler	101	1.8 pCi Th-232/g of PM emitted	Controlled with ESP	36
Radionuclides		4911	Coal combustion	Cyclone utility boiler	101	2.09 pCi Th-232/g of PM emitted	Controlled with scrubber, range 1.8-2.48 pCi Th-232/g of PM emitted	36
Radionuclides		4911	Coal combustion	Pulverized coal dry bottom utility boiler	101	298.3 pCi U-238/10E6 Btu	Range 6.3 to 675.9 pCi U-238/10E6 Btu, controlled with ESP	36
Radionuclides		4911	Coal combustion	Pulverized coal dry bottom utility boiler	101	22.8 pCi U-238/10E6 Btu	Controlled with ESP and scrubber	36
Radionuclides		4911	Coal combustion	Pulverized coal dry bottom utility boiler	101	73.7 pCi U-238/10E6 Btu	Controlled with scrubber	36
Radionuclides		4911	Coal combustion	Pulverized coal dry bottom utility boiler	101	170.0 pCi Th-232/10E6 Btu	Controlled with ESP, range 80.3-180.7 pCi Th-232/10E6 Btu	36

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Radionuclides		4911	Coal combustion	Pulverized coal dry bottom utility boiler	101	22.7 pCi Th-232/10E6 Btu	Controlled with ESP and scrubber	36
Radionuclides		4911	Coal combustion	Pulverized coal dry bottom utility boiler	101	36.8 pCi Th-232/10E6 Btu	Controlled with scrubber	36
Radionuclides		4911	Coal combustion	Pulverized coal dry bottom utility boiler	101	6.55 pCi U-238/g of PM emitted	Controlled with ESP, range 3.3-9.2 pCi U-238/g of PM emitted	36
Radionuclides		4911	Coal combustion	Pulverized coal dry bottom utility boiler	101	7.1 pCi U-238/g of PM emitted	Controlled with scrubber and ESP	36
Radionuclides		4911	Coal combustion	Pulverized coal dry bottom utility boiler	101	5.6 pCi U-238/g of PM emitted	Controlled with scrubber	36
Radionuclides		4911	Coal combustion	Pulverized coal dry bottom utility boiler	101	3.0 pCi Th-23?/g of PM emitted	Controlled with ESP, range 0.6-5.3 pCi Th-232/g of PM emitted	36
Radionuclides		4911	Coal combustion	Pulverized coal dry bottom utility boiler	101	7.14 pCi Th-232/g of PM emitted	Controlled with ESP and scrubber	36
Radionuclides		4911	Coal combustion	Pulverized coal dry bottom utility boiler	101	2.78 pCi Th-232/g of PM emitted	Controlled with scrubber	36
Radionuclides		4911	Coal combustion	Pulverized coal slag bottom utility boiler	101002	0.004 pCi U-238/g of PM emitted	Controlled with mechanical pot. and ESP	36
Radionuclides		4911	Coal combustion	Stoker utility boiler	101	13.9 pCi U-238/10E6 Btu	Controlled with ESP	36
Radionuclides		4911	Coal combustion	Stoker utility boiler	101	13.8 pCi Th-232/10E6 Btu	Controlled with ESP	36
Radionuclides		4911	Coal combustion	Stoker utility boiler	101	0.003 pCi U-238/g of PM emitted	Controlled with fabric filter	36
Radionuclides		4911	Coal combustion	Stoker utility boiler	101	0.9 pCi U-238/g of PM emitted	Controlled with ESP	36
Radionuclides		4911	Coal combustion	Stoker utility boiler	101	0.8 pCi Th-232/g of PM emitted	Controlled with ESP	36
Radionuclides		4911	Coal combustion	Utility boiler	101	3.0 -17.2 pCi of U238/kg coal burned	Calculated from information in reference	38
Radionuclides		4911	Coal combustion	Utility boiler	1	9 pCi U-238/g fly ash		37
Radionuclides		4911	Coal combustion	Utility boiler	1	4 pCi Th-232/g fly ash		37
Selenium	7782492		Coal combustion, commercial	Stoker boilers	103	199.4 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	94
Selenium	7782492		Coal combustion, industrial	Bituminous coal-fired boilers	102002	0.0032 lb/ton coal	222 GJ/hr boiler, sampling and test data, controlled	17

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Selenium	7782492		Coal combustion, industrial	Pulverized boiler	102	112.9 lb/10E12 Btu	Controlled by multiclones, based on reported emissions data and engineering judgement	94
Selenium	7782492		Coal combustion, industrial	Pulverized boiler	102	99.07 lb/10E12 Btu	Controlled by scrubber, based on reported emissions data and engineering judgement	94
Selenium	7782492		Coal combustion, industrial	Stoker boiler	102	83.71 lb/10E12 Btu	Controlled by multiclones, based on reported emissions data and engineering judgement	94
Selenium	7782492		Coal combustion, industrial	Stoker boiler	102	198.4 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	94
Selenium	7782492		Coal combustion, residential	Anthracite coal-fired furnaces		230.2 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	94
Selenium	7782492		Coal combustion, residential	Bituminous coal-fired furnaces		331.6 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	94
Selenium	7782492		Coal combustion, residential	Lignite coal-fired furnaces		119.6 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	94
Selenium	7782492		Oil combustion, commercial	Tangential furnace, distillate oil	103005	23.42 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	94
Selenium	7782492		Oil combustion, commercial	Tangential furnace, residual oil	103004	23.42 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	94
Selenium	7782492		Oil combustion, commercial	Wall furnace, distillate oil	103005	23.42 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	94
Selenium	7782492		Oil combustion, commercial	Wall furnace, residual oil	103004	23.42 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	94
Selenium	7782492		Oil combustion, industrial	Tangential furnace	102	4.63 lb/10E12 Btu	Controlled by scrubber, based on reported emissions data and engineering judgement	94
Selenium	7782492		Oil combustion, industrial	Tangential furnace	102	23.42 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	94
Selenium	7782492		Oil combustion, industrial	Wall furnace	102	4.63 lb/10E12 Btu	Controlled by scrubber, based on reported emissions data and engineering judgement	94
Selenium	7782492		Oil combustion, industrial	Wall furnace	102	23.42 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	94
Selenium	7782492		Oil combustion, residential	Distillate oil-fired furnaces		6.72 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	94
Selenium	7782492		Wood combustion, residential	Woodstove without baffle		2.6 x 10E-4 lb/ton wood	Uncontrolled, based on one study, nonbaffled stove burning green pine	98

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Selenium	7782492	3221	Glass manufacturing	Glass melting furnace	30501402	0.004 lbs/ton of glass produced	Uncontrolled emissions, container glass furnace	191, 23
Selenium	7782492	3313	Ferroalloy production	Electric arc furnace, sealed, silicomanganese	30300701	4.6 x 10E-7 lb/mw-hr energy consumed by furnace	Controlled, venturi scrubber	169
Selenium	7782492	3313	Ferroalloy production	Electric arc furnace, semi-sealed, ferrosilicon	30300702	0.00075 lb/mw-hr energy consumed by furnace	Uncontrolled	169
Selenium	7782492	3313	Ferroalloy production	Electric arc furnace, open, ferromanganese	30300701	0.00082 lb/mw-hr energy consumed by furnace	Uncontrolled	169
Selenium	7782492	4911	Coal combustion, utility	Bituminous coal-fired cyclone boiler, util/commerc/industr	10100203	3.24 lb/10E12 Btu	Controlled by ESP, based on reported emissions data and engineering judgement	94
Selenium	7782492	4911	Coal combustion, utility	Bituminous coal-fired cyclone boiler, util/commerc/industr	10100203	76.5 lb/10E12 Btu	Controlled by scrubber, based on reported emissions data and engineering judgement	94
Selenium	7782492	4911	Coal combustion, utility	Bituminous coal-fired pulverized dry bottom boilers	10100202	30.14 lb/10E12 Btu	Controlled by ESP, based on reported emissions data and engineering judgement	94
Selenium	7782492	4911	Coal combustion, utility	Bituminous coal-fired pulverized dry bottom boilers	10100202	37.79 lb/10E12 Btu	Controlled by scrubber, based on reported emissions data and engineering judgement	94
Selenium	7782492	4911	Coal combustion, utility	Bituminous coal-fired pulverized dry bottom boilers	10100202	373.35 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	94
Selenium	7782492	4911	Coal combustion, utility	Bituminous coal-fired pulverized wet bottom boilers	10100201	24.34 lb/10E12 Btu	Controlled by ESP, based on reported emissions data and engineering judgement	94
Selenium	7782492	4911	Coal combustion, utility	Bituminous coal-fired stoker boilers	101002	83.71 lb/10E12 Btu	Controlled by multicyclones, based on reported emissions data and engineering judgement	94
Selenium	7782492	4911	Coal combustion, utility	Cyclone boiler, lignite coal	10100303	7.18 lb/10E12 Btu	Controlled by ESP, based on reported emissions data and engineering judgement	94
Selenium	7782492	4911	Coal combustion, utility	Cyclone boiler, lignite coal	10100302	7.88 lb/10E12 Btu	Controlled by multicyclones, based on reported emissions data and engineering judgement	94
Selenium	7782492	4911	Coal combustion, utility	Lignite coal-fired stoker boilers	101003	83.71 lb/10E12 Btu	Controlled by multicyclones, based on reported emissions data and engineering judgement	94
Selenium	7782492	4911	Coal combustion, utility	Pulverized boiler, anthracite coal	10100101	30.14 lb/10E12 Btu	Controlled by ESP, based on reported emissions data and engineering judgement	94

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Selenium	7782492	4911	Coal combustion, utility	Pulverized dry bottom boiler, lignite coal	10100301	13.21 lb/10E12 Btu	Controlled by ESP, based on reported emissions data and engineering judgement	54
Selenium	7782492	4911	Coal combustion, utility	Pulverized wet bottom boiler, lignite coal	10100301	10.66 lb/10E-12 Btu	Controlled by ESP, based on reported emissions data and engineering judgement	54
Selenium	7782492	4911	Coal combustion, utility	Stoker boiler, anthracite coal	10100102	83.71 lb/10E12 Btu	Controlled by multicyclones, based on reported emissions data and engineering judgement	54
Selenium	7782492	4911	Oil combustion, utility	Tangential-fired, residual oil	101004	4.638 lb/10E12 Btu	Controlled by ESP, based on reported emissions data and engineering judgement	54
Selenium	7782492	4911	Oil combustion, utility	Tangential-fired, residual oil	101004	23.42 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	54
Selenium	7782492	4911	Oil combustion, utility	Wall furnace, residual oil	101004	4.638 lb/10E12 Btu	Controlled by ESP, based on reported emissions data and engineering judgement	54
Selenium	7782492	4911	Oil combustion, utility	Wall furnace, residual oil	101004	23.42 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	54
Selenium	7782492	4953	Municipal waste combustion	Mass burn unit	501001	4 x 10E-4 lb/ton feed	Calculated from three tests, average of range, uncontrolled, likely to exclude Se in vapor phase	21
Selenium	7782492	4953	Municipal waste combustion	Mass burn unit	501001	6 x 10E-5 lb/ton feed	Calculated from three tests, average of range, ESP, likely to exclude Se in vapor phase	21
Selenium	7782492	4953	Municipal waste combustion	RDF unit	501001	4 x 10E-4 lb/ton refuse	Calculated from max value of three tests, controlled with wet scrubber	19
Selenium	7782492	4953	Sewage sludge incineration	Fluidized-bed furnace	50100504	8 x 10E-6 lb/ton dry sludge	One test, scrubber	101
Selenium	7782492	4953	Sewage sludge incineration	Fluidized-bed incinerator	50200504	4 x 10E-5 lb/ton sludge	Calculated with 3.1 x 10E-4 lb/day, 1323 lb sludge/hr 10 hr/day	20
Selenium	7782492	4953	Sewage sludge incineration	Multiple hearth furnace	50100504	0.0032 lb/ton dry sludge	Average of four tests, scrubber	101
Silicon tetrafluoride	7783611	2819	Hydrofluoric acid manufacture	Tail gas	30101204	30 lb/ton acid	Uncontrolled, average of data for three plants	97
Silicon tetrafluoride	7783611	2819	Hydrofluoric acid manufacture	Tail gas	30101204	0.3 lb/ton acid	Caustic scrubber, average of data for three plants	97
Silver	7440224	226	Woven fabric finishing	Heat setting	330001	2.4 x 10E-8 lb/ton fabric	Uncontrolled, based on test data	92
Silver	7440224	226	Woven fabric finishing	Tenter frames - resin finishing	330001	3.8 x 10E-4 lb/ton fabric	Uncontrolled, average of four tests	92
Silver	7440224	226	Woven fabric finishing	Thermosol dyeing	330001	0.0012 lb/ton fabric	Uncontrolled, average of two tests	92

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Silver	7440224	25	Wood combustion, industrial	Horizontal return tube	10200906	2.55 lb/10E12 Btu heat input	Sample results, 1 plant, wood flowrate = .914 kg/s, boiler has 3-pass design w/flyash reinjection, uncontrolled	176
Silver	7440224	25	Wood combustion, industrial	Balanced draft wicbos stoker-fired industrial boiler	10200906	0.034 lb/ton fuel or 2273 lb/10E12 Btu	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 kg/s, boil. eff. 55.3%	177
Silver	7440224	25	Wood combustion, industrial	Balanced draft wicbos stoker-fired industrial boiler	10200906	0.00032 lb/ton fuel or 27.8 lb/10E12 Btu	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.94 kg/s, boil. eff. 61.3%	177
Silver	7440224	3313	Ferroalloy production	Electric arc furnace, open, ferromanganese	30300701	0.00095 lb/mw-hr energy consumed by furnace	Uncontrolled	149
Silver	7440224	3313	Ferroalloy production	Electric arc furnace, semi-sealed, ferrosilicon	30300702	0.0151 lb/mw-hr energy consumed by furnace	Uncontrolled	149
Silver	7440224	3313	Ferroalloy production	Electric arc furnace, sealed, silicomanganese	30300702	3.00 x 10E-7 lb/mw-hr energy consumed by furnace	Controlled, venturi scrubber	149
Silver	7440224	4953	Municipal waste combustion	Incinerator stack	501001	0.002 lb/ton munic. solid waste-dry wt.	Controlled by spray-baffle scrubber, based on material balance for model incinerator	98
Sodium	7440235	25	Wood combustion, industrial	Balanced draft wicbos stoker-fired industrial boiler	10200906	>0.032 lb/ton fuel or >2.018 lb/10E12 Btu	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 kg/s, boil. eff. 55.3%	177
Sodium	7440235	25	Wood combustion, industrial	Balanced draft wicbos stoker-fired industrial boiler	10200906	>0.0082 lb/ton fuel or >718.9 lb/10E12 Btu	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.94 kg/s, boil. eff. 61.3%	177
Sodium hydroxide	1310732	2082	Beer production	Brewing, bottle washing system	302009	9 lb/hr operation	Uncontrolled, developed by the State of NY and a brewery	158
Sodium hydroxide	1310732	2611	Pulp/paper mill, kraft pulp	Smelt dissolving tank	30700105	4 lb/ton air-dried pulp	Uncontrolled, 8 lb PM/ton air-dried pulp, assume 50% is NaOH	158
Sodium hydroxide	1310732	2611	Pulp/paper mill, kraft pulp	Smelt dissolving tank	30700105	0.025 lb/ton air-dried pulp	Controlled, packed tower, assume 50% of PM is NaOH	158
Sodium hydroxide	1310732	2611	Pulp/paper mill, kraft pulp	Smelt dissolving tank	30700105	0.6 lb/ton air-dried pulp	Controlled, demister pad plus packed tower, assume 50% of PM is NaOH	158
Sodium hydroxide	1310732	2611	Pulp/paper mill, kraft pulp	Smelt dissolving tank	30700105	0.2 lb/ton air-dried pulp	Controlled, demister pad plus shower, assume 50% PM is NaOH	158
Sodium hydroxide	1310732	2611	Pulp/paper mill, kraft pulp	Smelt dissolving tank	30700105	0.5 lb/ton air-dried pulp	Controlled, demister pad, assume 50% PM is NaOH, range 0.026-1.15 lb NaOH/ton air-dried pulp	158

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Sodium hydroxide	1310732	3592	Automobile carburetor manufacture	Manual plating cleaning tanks		0.03 lb/hr/ft2 tank	Developed by State agency and plant personnel, assume NaOH is 9.7% soln.	198
Strontium	7440246	226	Woven fabric finishing	Heat setting	330001	6.8 x 10E-6 lb/ton fabric	Uncontrolled, based on test data	52
Strontium	7440246	226	Woven fabric finishing	Thermosol dyeing	330001	9.8 x 10E-6 lb/ton fabric	Uncontrolled, average of three tests	52
Styrene	100425		Scrap tire, open burning	Tires in experimental burn hut		1.359 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.3 kg/hr, uncontrolled	212
Styrene	100425		Scrap tire, open burning	Tires in experimental burn hut		1.229 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr, uncontrolled	212
Styrene	100425		Scrap tire, open burning	Tires in experimental burn hut		1.90 lb/ton tire	XAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 1.7 kg/hr, uncontrolled	212
Styrene	100425		Scrap tire, open burning	Tires in experimental burn hut		0.743 lb/ton tire	XAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 2.3 kg/hr, uncontrolled	212
Styrene	100425	2821	Plastics processing	Closed molding		0.01 - 0.02 lb/lb styrene resin used	Vapor-suppressed resin	97
Styrene	100425	2821	Plastics processing	Closed molding		0.01 - 0.03 lb/lb styrene resin used	Nonvapor-suppressed resin	97
Styrene	100425	2821	Plastics processing	Marble casting		0.01 - 0.02 lb/lb styrene resin used	Vapor-suppressed resin	97
Styrene	100425	2821	Plastics processing	Marble casting		0.01 - 0.03 lb/lb styrene resin used	Nonvapor-suppressed resin	97
Styrene	100425	2821	Plastics processing	Filament winding		0.02 - 0.07 lb/lb styrene resin produced	Vapor-suppressed resin	97
Styrene	100425	2821	Plastics processing	Filament winding		0.05 - 0.10 lb/lb styrene resin produced	Nonvapor-suppressed resin	97
Styrene	100425	2821	Plastics processing	Pultrusion		0.01 - 0.05 lb/lb styrene resin used	Vapor-suppressed resin	97
Styrene	100425	2821	Plastics processing	Pultrusion		0.04 - 0.07 lb/lb styrene resin used	Nonvapor-suppressed resin	97
Styrene	100425	2821	Plastics processing	Continuous lamination		0.01 - 0.05 lb/lb styrene resin used	Vapor-suppressed resin	97
Styrene	100425	2821	Plastics processing	Continuous lamination		0.04 - 0.07 lb/lb styrene resin used	Nonvapor-suppressed resin	97
Styrene	100425	2821	Plastics processing	Spray layup		0.03 - 0.09 lb/lb styrene resin used	Vapor-suppressed resin	97

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Styrene	100425	2821	Plastics processing	Spray layup		0.09 - 0.13 lb/lb styrene resin used	Nonvapor-suppressed resin	97
Styrene	100425	2821	Plastics processing	Hand layup		0.02 - 0.07 lb/lb styrene resin used	Vapor-suppressed resin	97
Styrene	100425	2821	Plastics processing	Hand layup		0.05 - 0.10 lb/lb styrene resin used	Nonvapor-suppressed resin	97
Styrene	100425	2821	Polystyrene production - batch process	Devolatilizer condenser	30101817	1 lb/ton polystyrene	Control status unclear, range 0.50-1.50	96
Styrene	100425	2821	Polystyrene production - batch process	Extruder quench	30101821	0.46 lb/ton polystyrene	Control status unclear, range 0.30-0.6	96
Styrene	100425	2821	Polystyrene production - batch process	Monomer storage/feed dissolver	30101817	0.18 lb/ton polystyrene	Control status unclear	96
Styrene	100425	2821	Polystyrene production - batch process	Reactor	30101818	1.47 lb/ton polystyrene	Control status unclear, range 0.24-2.70	96
Styrene	100425	2821	Polystyrene production - continuous process	Devolatilizer condenser	30101817	3.0 lb/ton polystyrene	Control status unclear, range 0.10-5.92	96
Styrene	100425	2821	Polystyrene production - continuous process	Extruder quench	30101821	0.30 lb/ton polystyrene	Control status unclear, range 0.10-0.36	96
Styrene	100425	2821	Polystyrene production - continuous process	Feed dissolver	30101817	0.016 lb/ton polystyrene	Control status unclear	96
Styrene	100425	2821	Polystyrene production - continuous process	Styrene recovery unit	30101817	0.18 lb/ton polystyrene	Control status unclear, range 0.18-0.26	96
Styrene	100425	2821	Styrene-butadiene copolymers production - emulsion crumb	Coagulation/blend tanks	301018	0.84 lb/ton polymer produced	Control status unclear	96
Styrene	100425	2821	Styrene-butadiene copolymers production - emulsion crumb	Dryer	301018	5.0 lb/ton polymer produced	Control status unclear	96
Styrene	100425	2821	Styrene-butadiene copolymers production - emulsion latex	Blend tanks	301018	0.2 lb/ton polymer	Control status unclear	96
Styrene	100425	2821	Styrene-butadiene copolymers production - emulsion latex	Monomer removal	301018	0.30 lb/ton polymer	Control status unclear	96
Styrene	100425	2821	Unsaturated polyester resin production	Product storage	301018	0.1 lb/ton resin	Control status unclear	96

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Styrene	100425	2821	Unsaturated polyester resin production	Styrene storage	407	0.04 lb/ton resin	Control status unclear	96
Styrene	100425	2821	Unsaturated polyester resin production	Thinning/blending	301018	0.16 lb/ton resin	Control status unclear	96
Styrene	100425	2822	Styrene-butadiene rubber produc. by emulsion polymerization	Dryer	301026	1.2 lb/ton SBR produced	Uncontrolled, based on industry estimates	81
Styrene	100425	2822	Styrene-butadiene rubber produc. by emulsion polymerization	Styrene storage (breathing)	40703613	0.04 lb/ton SBR produced	Uncontrolled, based on industry estimates	81
Styrene	100425	2822	Styrene-butadiene rubber produc. by emulsion polymerization	Styrene storage (fugitive)	407036	0.8 lb/ton SBR produced	Uncontrolled, based on industry estimates	81
Styrene	100425	2822	Styrene-butadiene rubber produc. by solution polymerization	Styrene storage (breathing)	40703613	0.04 lb/ton SBR produced	Uncontrolled, based on engineering estimates	81
Styrene	100425	2865	Ethylbenzene/styrene production	Benzene/toluene vacuum column	30116901	0.073 lb/ton ethylbenz/styrene produced	Control status unclear	96
Styrene	100425	2865	Ethylbenzene/styrene production	Nonbenzene/toluene vacuum columns	30116901	0.0328 lb/ton ethylbenz/styrene produced	Control status unclear	96
Styrene	100425	4953	Wastewater treatment	POTW	50100701	1000 lb/ton styrene in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	99
Sulfur chloride	10025679	2869	CCl4 production - CS2 chlorination	Separation unit	30130201	2.0 lb/ton produced	Control uncertain, based on tests and mass balance	95
Sulfur trioxide	7446119	4953	Municipal waste combustion	Modular excess-air combustor	501001	6.6 lb/ton feed	Uncontrolled, one data point only	180
Sulfur trioxide	7446119	4953	Municipal waste combustion	Modular excess-air combustor	501001	0.72 lb/ton feed	ESP control only, overall average of several source averages, range is 0.70 - 0.74 lb/ton	180
Sulfur trioxide	7446119	4953	Municipal waste combustion	Mass burn, water wall incinerator	501001	2.0 lb/ton feed	Uncontrolled, one data point only	180
Sulfur trioxide	7446119	4953	Municipal waste combustion	Mass burn, water wall incinerator	501001	1.66 lb/ton feed	ESP control only, one data point only	180
Sulfur trioxide	7446119	4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	0.126 lb/ton feed	Capacity > 600 tons/day, spray drying after acid gas and PM control, overall average of several source avgs., range is 0.120 - 0.130 lb/ton	180

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Sulfur trioxide	7446119	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	2.4 lb/ton feed	Capacity < 600 tons/day, uncontrolled, one data point only	180
Sulfur trioxide	7446119	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	0.126 lb/ton feed	Capacity < 600 tons/day, ESP control only, overall average of several source averages, range is 0.078 - 0.172 lb/ton	180
Sulfur trioxide	7446119	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	0.56 lb/ton feed	Capacity < 600 tons/day, spray drying after acid gas and PM control, one data point only	180
Sulfur trioxide	7446119	4953	Municipal waste combustion	Mass burn waterwall combustor, built before 1980	501001	0.148 lb/ton feed	Uncontrolled, one data point only	180
Sulfuric acid	7664939		Internal combustion engines - stationary	Distillate oil-fired gas turbine	101002	1.739 lb/10E12 Btu	Controlled emissions, FGD system with 90% efficiency for sulfuric acid mist	213
Sulfuric acid	7664939		Internal combustion engines - stationary	Distillate oil-fired gas turbine	101002	3.478 lb/10E12 Btu	Uncontrolled emissions	213
Sulfuric acid	7664939		Internal combustion engines - stationary	Distillate oil-fired reciprocating engine		4.8 x S sulfur in fuel ng/J	Controlled emissions, FGD system with 90% efficiency on sulfuric acid mist	213
Sulfuric acid	7664939		Internal combustion engines - stationary	Distillate oil-fired reciprocating engine		8.9 x S sulfur in fuel ng/J	Uncontrolled emissions	213
Sulfuric acid	7664939	2819	Sulfuric acid production - contact process	Entire process - bright virgin sulfur	30102201	1.7 lb/ton acid	Uncontrolled	97
Sulfuric acid	7664939	2819	Sulfuric acid production - contact process	Entire process - dark virgin sulfur	30102201	0.33-6.3 lb/ton acid	Uncontrolled, emission proportional to % oleum in product	97
Sulfuric acid	7664939	2819	Sulfuric acid production - contact process	Entire process - raw material is recovered sulfur	30102201	0.33-0.8 lb/ton acid	Uncontrolled, emission proportional to % oleum in product	97
Sulfuric acid	7664939	2819	Sulfuric acid production - contact process	Entire process - spent acid	30102201	2.2-2.4 lb/ton acid	Uncontrolled, emission proportional to % oleum in product	97
Sulfuric acid	7664939	2819	Sulfuric acid production - contact process	Entire process - sulfide ore	30102201	1.2-7.4 lb/ton acid	Uncontrolled, emission proportional to % oleum in product	97
Sulfuric acid	7664939	2819	Sulfuric acid production - contact process	Entire process	30102201	0.016 - 0.141 lbs/ton acid	Average of 32 pit was 0.081 lbs/ton, controlled by acid mist eliminator	200
Sulfuric acid	7664939	2819	Sulfuric acid production - contact process	Entire process	30102201	0.4 - 4 lbs/ton acid	Uncontrolled emissions, no oleum produced	200
Sulfuric acid	7664939	2819	Sulfuric acid production - contact process	Entire process	30102201	1 - 10 lbs/ton acid	Uncontrolled emissions, plant produces oleum	201

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Sulfuric acid	7664939	2819	Sulfuric acid production - contact process		30102201	0.004 - 0.15 lbs/ton acid	Average of 44 plts was 0.07 lbs/ton, controlled by acid mist eliminator	201
Sulfuric acid	7664939	2819	Sulfuric acid production - single absorption process	Entire process-ammonium sulfate waste and sulfur	30102201	0.06 lb/ton acid	Controlled with a vertical tube mist eliminator, measured using EPA method 8	175
Sulfuric acid	7664939	2819	Sulfuric acid production - single absorption process	Entire process - spent acid	30102201	0.29 lb/ton acid	Controlled with a vertical tube mist eliminator, measured using EPA method 8, average of 3 values, range is 0.26 - 0.31 lb/ton	175
Sulfuric acid	7664939	2819	Sulfuric acid production - single absorption process	Entire process-sulfur	30102201	0.18 lb/ton acid	Controlled with a scrubber and a horizontal dual pad mist eliminator, measured using EPA M 8, avg of 2 values, range is 0.16 - 0.20 lb/ton	175
Sulfuric acid	7664939	2819	Sulfuric acid production - single absorption process	Entire process-sulfur	30102201	0.06 lb/ton acid	Controlled with a vertical tube mist eliminator, measured using EPA Method 8	175
Sulfuric acid	7664939	2865	Toluene diisocyanate production	Sulfuric acid concentrator	30118102	0.018 lb/ton TDI produced	Calculated from 0.18% (wt.) in emission stream and 10 lb VOC/ton TDI	153
Sulfuric acid	7664939	491	Coal combustion, utility	Bituminous coal-fired boilers	101002	4.4 x % sulfur in fuel ng/J	Controlled emissions, FGD system with 50% efficiency for sulfuric acid mist	213
Sulfuric acid	7664939	491	Coal combustion, utility	Bituminous coal-fired boilers	101002	8.8 x % sulfur in fuel ng/J	Uncontrolled emissions	213
Sulfuric acid	7664939	491	Oil combustion, utility	Oil-fired utility boiler	101004	8.5 x % sulfur in fuel ng/J	Controlled emissions, FGD system with 50% efficiency for sulfuric acid mist	213
Sulfuric acid	7664939	491	Oil combustion, utility	Oil-fired utility boiler	101004	16.5 x % sulfur in fuel ng/J	Uncontrolled emissions	213
Terephthalic acid	100210	2869	Terephthalic acid (purified) production	Atmospheric centrifuge tank	301031	0.046 lb/ton TPA	Uncontrolled, particulate	62
Terephthalic acid	100210	2869	Terephthalic acid (purified) production	Crystallizer vent	30103103	0.196 lb/ton TPA	Uncontrolled, particulate	62
Terephthalic acid	100210	2869	Terephthalic acid (purified) production	Dryer vent	30103103	0.0024 lb/ton TPA	Uncontrolled, particulate	62
Terephthalic acid	100210	2869	Terephthalic acid (purified) production	Feed slurry vent tank	301031	0.176 lb/ton TPA	Uncontrolled, particulate	62
Terephthalic acid	100210	2869	Terephthalic acid (purified) production	Silo dust collector vent	301031	0.0034 lb/ton TPA	Uncontrolled, particulate	62
Tetrachlorobenzenes		226	Woven fabric finishing	Tenter frames - resin finish	330001	0.034 lb/ton fabric	Uncontrolled, based on one test	52

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
2,3,7,8-Tetrachlorodibenzofuran		24	Pulp/paper mill, kraft paper recovery boilers	Stack	307001	0.01 - 0.02 ng/dscm @ 3% O2	Three locations tested	115
2,3,7,8-Tetrachlorodibenzofuran		3341	Secondary copper smelting	Stack	304002	5100 ng/dscm @ 3% O2	Estimated value from stack test results	115
2,3,7,8-Tetrachlorodibenzofuran		49	Coal combustion	Flue gas, coal-fired boiler	101	Not detectable	Pulverized coal, low sulfur, high ash, one location, detection limits ranged (0.86 - (1.1 ng/m3	119
2,3,7,8-Tetrachlorodibenzofuran		49	Drum and barrel furnace	Stack	5	0.90 ng/dscm @ 3% O2	Tier 4 stack test sampling	115
2,3,7,8-Tetrachlorodibenzofuran		49	Industrial carbon regeneration	Stack		Not detectable	Tier 4 stack testing, detection limit (0.1 ng/dscm @ 3% O2	115
2,3,7,8-Tetrachlorodibenzofuran		49	Oil combustion	Flue gas	1	Not detectable	Low ash, 2% sulfur oil, sampled after heat exch., before ESP, 2378-TCDD detec. limit=(0.67-(1.3ng/m3	119
2,3,7,8-Tetrachlorodibenzofuran		49	Sewage sludge incineration	Stack	5	2.1 - 94 ng/dscm @ 3% O2	Two locations tested	115
2,3,7,8-Tetrachlorodibenzofuran		49	Wire reclamation incineration	Stack	5	0.40 ng/dscm @ 3% O2	Estimated value from stack test results	115
2,3,7,8-Tetrachlorodibenzofuran		49	Wood combustion	Stack, industrial wood-fired boiler	102009	1.8 ng/dscm @ 3% O2	Salt-laden wood, Tier 4 stack testing	115
2,3,7,8-Tetrachlorodibenzofuran		4953	Municipal waste combustion	ESP catch - fly ash	5	Not detectable - 6 x 10E-9 lb/ton	Appr. 60 sites tested, homologue data given in refer., isomer data may be avail. from indiv. refer.	116
2,3,7,8-Tetrachlorodibenzofuran		4953	Municipal waste combustion	Flue gas from stack - fly ash	5	Not detectable - 10.3 ng/m3	Four sites tested, homologue data given in refer., isomer data may be avail. from indiv. references	116
2,3,7,8-Tetrachlorodibenzofuran		4953	Municipal waste combustion	Mass burn, water wall incinerator	5	0.96 - 440 ng/Nm3 @ 12% CO2	n = 8, 8 locations, controlled with an ESP	118
2,3,7,8-Tetrachlorodibenzofuran		4953	Municipal waste combustion	Mass burn, water wall incinerator	5	1.79 x 10E-8 - 2.36 x 10E-6 lb/ton feed	n = 4, 3 locations, controlled with an ESP	118
2,3,7,8-Tetrachlorodibenzofuran		4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	7.8 x 10E-8 lb/ton RDF combusted	100% RDF fuel only, ESP control only, overall average of several source averages, range is 8.8 x 10E-9 - 2.6 x 10E-7 lb/ton	180
2,3,7,8-Tetrachlorodibenzofuran		4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	1.62 x 10E-7 lb/ton RDF combusted	100% RDF fuel only, uncontrolled, overall average of several source averages, range is 1.4 x 10E-7 - 1.82 x 10E-7 lb/ton	180
2,3,7,8-Tetrachlorodibenzofuran		4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	4.8 x 10E-10 lb/ton RDF combusted	Spray drying after acid gas and PM control, 100% RDF fuel only, range is 1.1 x 10E-10 - 8.4 x 10E-10 lb/ton	180
2,3,7,8-Tetrachlorodibenzofuran		4953	Municipal waste combustion	Modular starved-air combustor	501001	2.6 x 10E-6 lb/ton feed	ESP control only, overall average of several source averages, range is 6.8 x 10E-9 - 8.8 x 10E-6 lb/ton	180

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POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
2,3,7,8-Tetrachlorodibenzofuran		4953	Municipal waste combustion	Modular starved-air combustor	501001	2.4 x 10E-8 lb/ton feed	Uncontrolled, one data point only	180
2,3,7,8-Tetrachlorodibenzofuran		4953	Municipal waste combustion	Modular excess-air combustor	501001	3.8 x 10E-8 lb/ton feed	ESP control only, overall average of several source averages, range is 8.8 x 10E-9 - 6.6 x 10E-8 lb/ton	180
2,3,7,8-Tetrachlorodibenzofuran		4953	Municipal waste combustion	Modular excess-air combustor	501001	3.4 x 10E-10 lb/ton feed	Dry sorbent injection after acid gas and PM control, one data point only	180
2,3,7,8-Tetrachlorodibenzofuran		4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	6.8 x 10E-8 lb/ton feed	Capacity > 600 tons/day, ESP control only, overall average of several source averages, range is 7.2 x 10E-9 - 2.0 x 10E-7 lb/ton	180
2,3,7,8-Tetrachlorodibenzofuran		4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	9.0 x 10E-8 lb/ton feed	Capacity > 600 tons/day, uncontrolled, overall average of several source averages, range is 6.8 x 10E-9 - 1.08 x 10E-7 lb/ton	180
2,3,7,8-Tetrachlorodibenzofuran		4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	6.0 x 10E-9 lb/ton feed	Capacity > 600 tons/day, spray drying after acid gas and PM control, one data point only	180
2,3,7,8-Tetrachlorodibenzofuran		4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501002	8.8 x 10E-9 lb/ton feed	Capacity < 600 tons/day, dry sorbent injection after acid gas and PM control, range is 1.42 x 10E-9 - 3.0 x 10E-8 lb/ton	180
2,3,7,8-Tetrachlorodibenzofuran		4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	9.6 x 10E-10 lb/ton feed	Capacity < 600 tons/day, spray drying after acid gas and PM control, one data point only	180
2,3,7,8-Tetrachlorodibenzofuran		4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	2.0 x 10E-8 lb/ton feed	Capacity < 600 tons/day, ESP control only, overal avg. of several source avgs., range is 1.9 x 10E-8 - 2.2 x 10E-8 lb/ton	180
2,3,7,8-Tetrachlorodibenzofuran		4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	18 ug/Mg feed	Capacity < 600 tons/day, uncontrolled, overall average of several source averages	180
2,3,7,8-Tetrachlorodibenzofuran		4953	Municipal waste combustion	Mass burn waterwall combustor, built before 1980	501001	1.04 x 10E-6 lb/ton feed	ESP control only, overall average of several source averages, range is 2.2 x 10E-7 - 2.2 x 10E-6 lb/ton	180
2,3,7,8-Tetrachlorodibenzofuran		4953	Municipal waste combustion	Mass burn, refractory facility	501001	3.6 x 10E-7 lb/ton feed	ESP control only, overall average of several source averages, range is 2.8 x 10E-7 - 4.2 x 10E-7 lb/ton	180
2,3,7,8-Tetrachlorodibenzofuran		4953	Sewage sludge incineration	Multiple hearth furnace	50100506	2.464 x 10E-7 lb/ton dry sludge	Average of four tests, scrubber	101
Tetrachlorodibenzofurans, total		26	Pulp/paper mill, kraft paper recovery boilers	Stack	307001	0.13 - 0.46 ng/dscm @ 3% O2	Three locations tested, does not include 2,3,7,8-isomer	115
Tetrachlorodibenzofurans, total		3341	Secondary copper smelting	Stack	304002	18,000 ng/dscm @ 5% O2	Estimated value from stack test results, does not include 2,3,7,8-isomer	119

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Tetrachlorodibenzofurans, total		49	Drum and barrel furnace	Stack	9	14 ng/dscm @ 3% O2	Tier 4 stack test sampling, except the 2,3,7,8-isomer	116
Tetrachlorodibenzofurans, total		49	Industrial carbon regeneration	Stack		1.2 ng/dscm @ 3% O2	Tier 4 stack testing, does not include 2,3,7,8-isomer	115
Tetrachlorodibenzofurans, total		49	Sewage sludge incineration	Stack	9	19 - 150 ng/dscm @ 3% O2	Three locations tested, does not include 2,3,7,8-isomer	115
Tetrachlorodibenzofurans, total		49	Waste combustion - industrial	Stack - fly ash	903	2 x 10E-4 lb/ton	One site tested, homologue data given in refer., isomer data may be avail. from indiv. references	114
Tetrachlorodibenzofurans, total		49	Wastewater treatment - organics removal by activated carbon	Regeneration of activated carbon using fluidized bed system - flue gas		0.08 - 0.51 ng/m3	No afterburner, prechlorin. of wastewater performed	119
Tetrachlorodibenzofurans, total		49	Wastewater treatment - organics removal by activated carbon	Regeneration of activated carbon using fluidized bed system - particle		Not detectable - 4.9 x 10E-4 lb/ton	No afterburner, prechlorin. of wastewater performed, detection limit = 8 x 10E-6 lb/ton	119
Tetrachlorodibenzofurans, total		49	Wire reclamation incineration	Bottom ash	9	2.32 x 10E-9 lb/ton	One facility tested	119
Tetrachlorodibenzofurans, total		49	Wire reclamation incineration	Furnace - ash	9	1.46 x 10E-4 lb/ton	One study, three furnaces	119
Tetrachlorodibenzofurans, total		49	Wire reclamation incineration	Stack	9	29 ng/dscm @ 3% O2	Estimated value from stack test results, does not include 2,3,7,8-isomer	115
Tetrachlorodibenzofurans, total		49	Wire reclamation incineration	Stack - fly ash	9	2.32 x 10E-9 lb/ton	One study, three furnaces	119
Tetrachlorodibenzofurans, total		49	Wire reclamation incineration	Stack - fly ash	9	2.32 x 10E-9 lb/ton	One site tested, homologue data given in refer., isomer data may be avail. from indiv. references	114
Tetrachlorodibenzofurans, total		49	Wood combustion	Stack, industrial wood-fired boiler	103009	37 ng/dscm @ 3% O2	Salt-laden wood, Tier 4 stack testing, does not include 2,3,7,8-isomer	115
Tetrachlorodibenzofurans, total		4953	Municipal waste combustion	ESP catch - fly ash	9	Not detectable - 4 x 10E-4 lb/ton	Appr. 60 sites tested, homologue data given in refer., isomer data may be avail. from indiv. refer.	114
Tetrachlorodibenzofurans, total		4953	Municipal waste combustion	Flue gas from stack - fly ash	9	10.6 - 309 ng/m3	Four sites tested, homologue data given in refer., isomer data may be avail. from indiv. references	114
Tetrachlorodibenzofurans, total		4953	Municipal waste combustion	Mass burn	9	0.32 - 4600 ng/Nm3 @ 12% CO2	Developed from test data, w/ various controls - ESP or water spray humidifier/dry sorbent injection	117
Tetrachlorodibenzofurans, total		4953	Municipal waste combustion	Mass burn, water wall incinerator	9	7.3 - 4560 ng/Nm3 @ 12% CO2	n = 11, 6 locations, controlled with an ESP	118
Tetrachlorodibenzofurans, total		4953	Municipal waste combustion	Mass burn, water wall incinerator	9	6.74 x 10E-8 - 3.44 x 10E-5 lb/ton feed	n = 7, 4 locations, controlled with an ESP	118

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Tetrachlorodibenzofurans, total		4953	Municipal waste combustion	Modular incinerator	S	12.2 - 348 ng/Nm3 @ 12% CO2	Developed from test data, all uncontrolled	117
Tetrachlorodibenzofurans, total		4953	Municipal waste combustion	Refuse derived fuel incinerator	S	22 - 480 ng/Nm3 @ 12% CO2	Developed from test data, most ESP controlled, one with ESP/cyclone	117
Tetrachlorodibenzofurans, total		4953	Municipal waste combustion	Refuse derived fuel incinerator	S	46.9 - 9800 ng/Nm3	n = 8, 3 locations, controlled with an ESP	118
Tetrachlorodibenzofurans, total		4953	Municipal waste combustion	Stack - fly ash	S	161 ng/m3	One site tested, homologue data given in refer., isomer data may be avail. from indiv. references	116
Tetrachlorodibenzofurans, total		4953	Municipal waste combustion	Stack - fly ash	S	1.4 x 10E-8 lb/ton	One site tested, homologue data given in refer., isomer data may be avail. from indiv. references	116
Tetrachlorodibenzofurans, total		4953	Municipal waste combustion	Starved air combustor	S	12.2 - 124 ng/Nm3 @ 12% CO2	n = 8, 2 locations, no controls	118
Tetrachlorodibenzofurans, total		4953	Municipal waste combustion	Starved air combustor	S	8.6 x 10E-8 - 1.06 x 10E-6 lb/ton feed	n = 8, 3 locations, no controls	118
Tetrachlorodibenzofurans, total		4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	1.32 x 10E-6 lb/ton RDF combusted	100% RDF fuel only, ESP control only, overall average of several source averages, range is 1.92 x 10E-7 - 3.4 x 10E-6 lb/ton	180
Tetrachlorodibenzofurans, total		4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	2.0 x 10E-6 lb/ton RDF combusted	100% RDF only, uncontrolled, overall average of several source averages, range is 1.32 x 10E-6 - 2.6 x 10E-6 lb/ton	180
Tetrachlorodibenzofurans, total		4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	4.0 x 10E-9 lb/ton RDF combusted	Spray drying after acid gas and PM control, 100% RDF fuel only, range is 3.0 x 10E-9 - 5.8 x 10E-9 lb/ton	180
Tetrachlorodibenzofurans, total		4953	Municipal waste combustion	Modular starved-air combustor	501001	1.82 x 10E-8 lb/ton feed	ESP control only, overall average of several source averages, range is 2.2 x 10E-7 - 3.0 x 10E-8 lb/ton	180
Tetrachlorodibenzofurans, total		4953	Municipal waste combustion	Modular starved-air combustor	501001	6.4 x 10E-7 lb/ton feed	Uncontrolled, overall average of several source averages, range is 8.6 x 10E-8 - 1.06 x 10E-6 lb/ton	180
Tetrachlorodibenzofurans, total		4953	Municipal waste combustion	Modular excess-air combustor	501001	2.0 x 10E-7 lb/ton feed	ESP control only, overall average of several source averages, range is 1.26 x 10E-7 - 2.8 x 10E-7 lb/ton	180
Tetrachlorodibenzofurans, total		4953	Municipal waste combustion	Modular excess-air combustor	501001	8.6 x 10E-9 lb/ton feed	Dry sorbent injection after acid gas and PM control, one data point only	180
Tetrachlorodibenzofurans, total		4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	4.0 x 10E-7 lb/ton feed	Capacity > 600 tons/day, ESP control only, overall avg of several source avgs, range is 1.64 x 10E-7 - 8.0 x 10E-7 lb/ton	180
Tetrachlorodibenzofurans, total		4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	6.6 x 10E-7 lb/ton feed	Capacity > 600 tons/day, uncontrolled, overall avg of several source avgs, range is 1.32 x 10E-7 - 1.42 x 10E-6 lb/ton	180

POLLUTANT	CAS NUMBER	PIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Tetrachlorodibenzofurans, total		4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	1.52 x 10E-7 lb/ton feed	Capacity > 600 tons/day, spray drying after acid gas and PM control, one data point only	180
Tetrachlorodibenzofurans, total		4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	6.8 x 10E-8 lb/ton feed	Capacity < 600 tons/day, uncontrolled, one data point only	180
Tetrachlorodibenzofurans, total		4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	2.2 x 10E-7 lb/ton feed	Capacity < 600 tons/day, ESP control only, overall ave of several source aves, range is 5.8 x 10E-8 - 4.0 x 10E-7 lb/ton	180
Tetrachlorodibenzofurans, total		4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	2.4 x 10E-9 lb/ton feed	Capacity < 600 tons/day, spray drying after acid gas and PM control, one data point only	180
Tetrachlorodibenzofurans, total		4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	1.02 x 10E-7 lb/ton feed	Capacity < 600 tons/day, dry sorbent injection after acid gas and PM control, range is 5.4 x 10E-8 - 2.2 x 10E-7 lb/ton	180
Tetrachlorodibenzofurans, total		4953	Municipal waste combustion	Mass burn waterwall combustor, built before 1980	501001	1.12 x 10E-5 lb/ton feed	ESP control only, overall average of several source averages, range is 9.0 x 10E-7 - 3.4 x 10E-5 lb/ton	180
Tetrachlorodibenzofurans, total		4953	Municipal waste combustion	Mass burn, refractory facility	501001	7.6 x 10E-6 lb/ton feed	ESP control only, range is 6.0 x 10E-6 - 9.0 x 10E-6 lb/ton	180
Tetrachlorodibenzofurans, total		4953	Sewage sludge incineration	Multiple hearth furnace	50100504	9.442 x 10E-7 lb/ton dry sludge	Average of five tests, scrubber	101
Tetrachlorodibenzofurans, total		806	Hospital waste incineration	Incinerator	50200505	1.26 x 10E-6 lb/ton feed	Uncontrolled, test data	167
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016		Internal combustion engines - mobile	Automobile emissions		Not detectable	Sample was a scraping from muffler of car using leaded gas, detection limit = 4 x 10E-9 lb/ton	119
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016		Internal combustion engines - mobile	Automobile emissions		8.96 x 10E-6 lb/ton	Samples of the filter extract (n = 3) from a car using leaded gas	119
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016		Internal combustion engines - mobile	Automobile emissions		Not detectable	Sample - scraping from muffler, car used unlead gas w/ catalytic converter, detec. limit 6 x 10E-9	119
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016		Internal combustion engines - mobile	Automobile emissions		2.8 x 10E-6 lb/ton	Sample of filter extract, car used unlead gas + catalytic converter	119
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016		Internal combustion engines - mobile	Diesel car emissions		Not detectable	Samples of two filter extracts, diesel fuel used	119
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016		Internal combustion engines - mobile	Diesel truck emissions		Not detectable - 6 x 10E-9 lb/ton	Samples of scrapings from 2 mufflers, diesel fuel used	119

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	26	Pulp/paper mill, kraft paper recovery boilers	Stack	307001	Not detectable	Three locations tested, detection limit <0.1 ng/dscm @ 3% 02	118
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	3341	Secondary copper smelting	Stack	304002	170 ng/dscm @ 3% 02	Estimated value from stack test results	118
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	49	Coal combustion	Flue gas, coal-fired boiler	101	Not detectable	Pulverized coal, low sulfur, high ash, one location, detection limits ranged <5.4 - <6.8 ng/m3	119
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	49	Drum and barrel furnace	Stack	5	0.05 ng/dscm @ 3% 02	Tier 4 stack test sampling	115
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	49	Hazardous waste incineration	Rotary kiln - particulate	50300501	Not detectable - 0.011 lb/ton	One location, n = 3, both solid & liquid waste, no supplementary fuel used	119
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	49	Hazardous waste incineration	Rotary kiln - particulate	50300501	ND	One location, n = 5, both solid & liquid waste, use of supplementary fuel	119
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	49	Hazardous waste incineration	Stack - fly ash	50300501	Not detectable - 2.2 x 10E-4 lb/ton	3 sites tested, homologue data given in refer., isomer data may be avail. from indiv. references	116
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	49	Hazardous waste incineration	Tar burner - particulate	50300501	Not detectable	One location, n = 4, Uses natural gas as supp. fuel, detection limit = 2.6 x 10E-8 - 2 10E-6 lb/ton	119
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	49	Industrial carbon regeneration	Stack		Not detectable	Tier 4 stack testing, detection limit <0.1 ng/dscm @ 3% 02	115
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	49	Oil and coal combustion	Stack - particulate	102	Not detectable	One location, detection limit = 2 x 10E-9 lb/ton	119
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	49	Oil combustion	Boiler flue gas	1	Not detectable	Low ash, 2% sulfur oil, sampled after heat exch., before ESP, 2378-TCDD detec. limit=<4.2-<7.9 ng/m3	119
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	49	Sewage sludge incineration	Stack	5	Not detectable - 0.14 ng/dscm @ 3% 02	Three locations tested, detection limit <0.1 ng/dscm @ 3% 02	115
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	49	Waste combustion - industrial boilers cofiring wastes	Flue gas	102	Not detectable - <1.5 ng/m3	Cofiring waste containing chlorinated material, nine locations, detected at only two sites	119
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	49	Wastewater treatment - organics removal by activated carbon	Regeneration of activated carbon using fluidized bed system - afrburn		Not detectable	With afterbur., postchlorin. of wastewater relative to activated carbon bed, detec.limit 0.004 ng/m3	119
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	49	Wastewater treatment - organics removal by activated carbon	Regeneration of activated carbon using fluidized bed system - flue gas		0.01 - 0.21 ng/m3	No afterburner, prechlorin. of wastewater performed	119
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	49	Wastewater treatment - organics removal by activated carbon	Regeneration of activated carbon using fluidized bed system - particle		8.6 x 10E-6 - 1.02 x 10E-4 lb/ton	No afterburner, prechlorin. of wastewater performed	119

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
2,3,7,8-Tetrachlorodibenz o-p-dioxin	1746016	49	Wastewater treatment - organics removal by activated carbon	Regeneration of activated carbon using fluidized bed system - recuper.		Not detectable	With afterbur., postchlorin. of wastewater relative to activated carbon bed, detec.limit 0.004 ng/m3	119
2,3,7,8-Tetrachlorodibenz o-p-dioxin	1746016	49	Wastewater treatment - organics removal by activated carbon	Regeneration of activated carbon using fluidized bed system - stack		Not detectable	With afterbur., postchlorin. of wastewater relative to activated carbon bed, detec.limit 0.004 ng/m3	119
2,3,7,8-Tetrachlorodibenz o-p-dioxin	1746016	49	Wire reclamation incineration	Stack	5	0.07 ng/dscm @ 3% O2	Estimated value from stack test results	115
2,3,7,8-Tetrachlorodibenz o-p-dioxin	1746016	49	Wood combustion	Stack, industrial wood-fired boiler	102009	0.28 ng/dscm @ 3% O2	Salt-laden wood, Tier 4 stack testing	115
2,3,7,8-Tetrachlorodibenz o-p-dioxin	1746016	4953	Municipal waste combustion	ESP catch - fly ash	5	Not detectable - 2 x 10E-4 lb/ton	Aver. 40 sites tested, homologue data given in refer., isomer data may be avail. from indiv. refer.	116
2,3,7,8-Tetrachlorodibenz o-p-dioxin	1746016	4953	Municipal waste combustion	Flue gas from stack - fly ash	5	0.41 - 1.7 ng/m3	Four sites tested, homologue data given in refer., isomer data may be avail. from indiv. references	116
2,3,7,8-Tetrachlorodibenz o-p-dioxin	1746016	4953	Municipal waste combustion	Mass burn, water wall incinerator	5	0.101 - 42.5 ng/Nm3 @ 12% CO2	n = 10, 6 locations, controlled with an ESP	118
2,3,7,8-Tetrachlorodibenz o-p-dioxin	1746016	4953	Municipal waste combustion	Mass burn, water wall incinerator	5	7.8 x 10E-10 - 5.78 x 10E-7 lb/ton feed	n = 6, 4 locations, controlled with an ESP	118
2,3,7,8-Tetrachlorodibenz o-p-dioxin	1746016	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	3.8 x 10E-8 lb/ton RDF combusted	100% RDF fuel only, ESP control only, overall average of several source averages, range is 1.8 x 10E-9 - 7.2 x 10E-8 lb/ton	180
2,3,7,8-Tetrachlorodibenz o-p-dioxin	1746016	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	1.4 x 10E-8 lb/ton RDF combusted	100% RDF fuel only, uncontrolled, overall average of several source averages, range is 7.4 x 10E-9 - 3.0 x 10E-8 lb/ton	180
2,3,7,8-Tetrachlorodibenz o-p-dioxin	1746016	4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	3.4 x 10E-11 lb/ton RDF combusted	Spray drying after acid gas & PM ctrl, overall avg. of several source avgs., 100% RDF fuel only, range is 2.4 x 10E-11 - 4.4 x 10E-11 lb/ton	180
2,3,7,8-Tetrachlorodibenz o-p-dioxin	1746016	4953	Municipal waste combustion	Modular starved-air combustor	501001	1.2 x 10E-8 lb/ton feed	ESP control only, overall average of several source averages, range is 1.6 x 10E-10 - 2.4 x 10E-8 lb/ton	180
2,3,7,8-Tetrachlorodibenz o-p-dioxin	1746016	4953	Municipal waste combustion	Modular starved-air combustor	501001	8.8 x 10E-9 lb/ton feed	Uncontrolled, overall average of several source averages, range is 4.6 x 10E-9 - 1.3 x 10E-8 lb/ton	180
2,3,7,8-Tetrachlorodibenz o-p-dioxin	1746016	4953	Municipal waste combustion	Modular excess-air combustor	501001	1 x 10E-9 lb/ton feed	ESP control only, overall average of several source averages	180
2,3,7,8-Tetrachlorodibenz o-p-dioxin	1746016	4953	Municipal waste combustion	Modular excess-air combustor	501001	4.4 x 10E-11 lb/ton feed	Dry sorbent injection after acid gas and PM control, one data point only	180
2,3,7,8-Tetrachlorodibenz o-p-dioxin	1746016	4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	2.4 x 10E-9 lb/ton feed	Capacity > 400 tons/day, ESP control only, overall avg. of several source avgs., range is 8.4 x 10E-10 - 1.0 x 10E-8 lb/ton	180

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	5301001	5.8 x 10E-9 lb/ton feed	Capacity > 400 tons/day, uncontrolled, overall average of several source averages, range is 1.14 x 10E-9 - 1.4 x 10E-8 lb/ton	180
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	1 x 10E-9 lb/ton feed	Capacity > 400 tons/day, spray drying after acid gas and PM control, one data point only	180
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	1 x 10E-9 lb/ton feed	Capacity < 400 tons/day, spray drying after acid gas and PM control, one data point only	180
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	5.8 x 10E-10 lb/ton feed	Cap. < 400 tons/day, dry sorbent injection after acid gas and PM control, range is 1.02 x 10E-10 - 1.04 x 10E-9 lb/ton	180
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	3 x 10E-9 lb/ton feed	Capacity < 400 tons/day, uncontrolled, one data point only	180
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	1.7 x 10E-9 lb/ton feed	Capacity < 400 tons/day, ESP control only, range is 8.0 x 10E-10 - 2.6 x 10E-9 lb/ton	180
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	4953	Municipal waste combustion	Mass burn waterwall combustor, built before 1980	501001	2.2 x 10E-7 lb/ton feed	ESP control only, overall average of several source averages, range is 4.2 x 10E-9 - 8.8 x 10E-7 lb/ton	180
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	4953	Municipal waste combustion	Mass burn, refractory facility	501001	1.0 x 10E-7 lb/ton feed	ESP control only, overall average of several source averages, range is 9.8 x 10E-8 - 1.0 x 10E-7 lb/ton	180
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	4953	Sewage sludge incineration	Multiple hearth furnace	50100506	1.8 x 10E-9 lb/ton dry sludge	Average of four tests, scrubber	101
Tetrachlorodibenzo-p-dioxins, total			Internal combustion engines - mobile	Automobile emissions		9.94 x 10E-5 lb/ton	Samples of the filter extract (n = 3) from a car using leaded gas	119
Tetrachlorodibenzo-p-dioxins, total			Internal combustion engines - mobile	Automobile emissions		7.48 x 10E-5 lb/ton	Sample of filter extract, car used unlead gas + catalytic converter	119
Tetrachlorodibenzo-p-dioxins, total			Internal combustion engines - mobile	Diesel car emissions		Not detectable	Samples of two filter extracts, diesel fuel used	119
Tetrachlorodibenzo-p-dioxins, total		26	Pulp/paper mill, kraft paper recovery boilers	Stack	307001	Not detectable - 0.13 ng/dscm @ 3% O2	Three locations tested, detection limit <0.1 ng/dscm @ 3% O2, does not include 2,3,7,8-isomer	115
Tetrachlorodibenzo-p-dioxins, total		3341	Secondary copper smelting	Stack	304002	1400 ng/dscm @ 3% O2	Estimated value from stack test results, does not include 2,3,7,8-isomer	115
Tetrachlorodibenzo-p-dioxins, total		49	Coal and refuse-derived fuel combustion	Flue gas	1	Not detectable	One location, detection limit = 5 ng/m3, 15% RDF	115

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Tetrachlorodibenzo-p-dioxins, total		49	Coal combustion	Fly ash, coal-fired boiler	101	Not detectable	Eight locations, controls unknown, detection limit 4 x 10E-9 lb/ton	119
Tetrachlorodibenzo-p-dioxins, total		49	Coal combustion	Stack - fly ash, coal-fired boiler	101	Not detectable	Low sulfur, high ash, one locaton, detection limit 1.2 x 10E-8 lb/ton	119
Tetrachlorodibenzo-p-dioxins, total		49	Drum and barrel furnace	Stack	5	1.2 ng/dscm @ 3% O2	Tier 4 stack test sampling, except the 2,3,7,8 isomer	115
Tetrachlorodibenzo-p-dioxins, total		49	Hazardous waste incineration	Stack - fly ash	50300501	Not detectable - 0.024 lb/ton	3 sites tested, homologue data given in refer., isomer data may be avail. from indiv. references	116
Tetrachlorodibenzo-p-dioxins, total		49	Industrial carbon regeneration	Stack		0.57 ng/dscm @ 3% O2	Tier 4 stack testing, does not include 2,3,7,8-isomer	115
Tetrachlorodibenzo-p-dioxins, total		49	Sewage sludge incineration	Stack	5	0.40 - 11 ng/dscm @ 3% O2	Three locations tested, does not include 2,3,7,8-isomer	115
Tetrachlorodibenzo-p-dioxins, total		49	Waste combustion - industrial	Stack - fly ash	503	2 x 10E-4 lb/ton	One site tested, homologue data given in refer., isomer data may be avail. from indiv. references	116
Tetrachlorodibenzo-p-dioxins, total		49	Wastewater treatment - organics removal by activated carbon	Regeneration of activated carbon using fluidized bed system - flue gas		0.06 - 0.3 ng/m3	No afterburner, prechlorin. of wastewater performed	119
Tetrachlorodibenzo-p-dioxins, total		49	Wastewater treatment - organics removal by activated carbon	Regeneration of activated carbon using fluidized bed system - particle		7.2 x 10E-5 - 1.32 x 10E-4 lb/ton	No afterburner, prechlorin. of wastewater performed	119
Tetrachlorodibenzo-p-dioxins, total		49	Wire reclamation incineration	Furnace - ash	5	1.14 x 10E-6 lb/ton	One study, three furnaces	119
Tetrachlorodibenzo-p-dioxins, total		49	Wire reclamation incineration	Incinerator stack	5	8.2 x 10E-7 lb/ton	One facility tested	119
Tetrachlorodibenzo-p-dioxins, total		49	Wire reclamation incineration	Stack	5	1.2 ng/dscm @ 3% O2	Estimated value from stack test results, does not include 2,3,7,8-isomer	115
Tetrachlorodibenzo-p-dioxins, total		49	Wire reclamation incineration	Stack - fly ash	5	8.2 x 10E-7 lb/ton	One study, three furnaces	119
Tetrachlorodibenzo-p-dioxins, total		49	Wire reclamation incineration	Stack - fly ash	5	8.2 x 10E-7 lb/ton	One site tested, homologue data given in refer., isomer data may be avail. from indiv. references	116
Tetrachlorodibenzo-p-dioxins, total		49	Wood combustion	Stack, industrial wood-fired boiler	102009	47 ng/dscm @ 3% O2	Salt-laden wood, Tier 4 stack testing, does not include 2,3,7,8-isomer	115
Tetrachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	ESP catch - fly ash	5	Not detectable - 2.2 x 10E-4 lb/ton	Appr. 60 sites tested, homologue data given in refer., isomer data may be avail. from indiv. refer.	116
Tetrachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	Flue gas from stack - fly ash	5	3.08 - 120 ng/m3	Four sites tested, homologue data given in refer., isomer data may be avail. from indiv. references	116

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Tetrachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	Mass burn	5	0.20 - 1200 ng/Nm3 @ 12% CO2	Developed from test data w/ various controls - ESP or water spray humidifer/dry sorbent injection	117
Tetrachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	Mass burn, water wall incinerator	5	1.268 x 10E-8 - 6.04 x 10E-6 lb/ton feed	n = 7, 4 locations, controlled with an ESP	118
Tetrachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	Mass burn, water wall incinerator	5	19.9 - 3500 ng/Nm3 @ 12% CO2	n = 8, 3 locations, controlled with an ESP	118
Tetrachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	Modular incinerator	5	1.0 - 43.7 ng/Nm3 @ 12% CO2	Developed from test data, all uncontrolled	117
Tetrachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	Refuse derived fuel incinerator	5	3.5 - 260 ng/Nm3 @ 12% CO2	Developed from test data, most ESP controlled, one with ESP/cyclone	117
Tetrachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	Stack - fly ash	5	57 ng/m3	One site tested, homologue data given in refer., isomer data may be avail. from indiv. references	116
Tetrachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	Stack - fly ash	5	4 x 10E-6 lb/ton	One site tested, homologue data given in refer., isomer data may be avail. from indiv. references	116
Tetrachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	4.8 x 10E-7 lb/ton RDF combusted	100% RDF fuel only, ESP control only, overall average of several source averages, range is 1.3 x 10E-8 - 1.28 x 10E-6 lb/ton	180
Tetrachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	3.4 x 10E-7 lb/ton RDF combusted	100% RDF only, uncontrolled, overall average of several source averages, range is 2.4 x 10E-7 - 4.4 x 10E-7 lb/ton	180
Tetrachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	Refuse derived fuel incinerator	501001	5.4 x 10E-10 lb/ton RDF combusted	Spray drying after acid gas and PM control, 100% RDF fuel only, range is 9 x 10E-11 - 1.0 x 10E-9 lb/ton	180
Tetrachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	Modular starved-air combustor	501001	1.82 x 10E-6 lb/ton feed	ESP control only, overall average of several source averages, range is 2.6 x 10E-8 - 3.6 x 10E-6 lb/ton	180
Tetrachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	Modular starved-air combustor	501001	5.6 x 10E-8 lb/ton feed	Uncontrolled, overall average of several source averages, range is 8.0 x 10E-9 - 1.62 x 10E-7 lb/ton	180
Tetrachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	Modular excess-air combustor	501001	4.0 x 10E-8 lb/ton feed	ESP control only, overall average of several source averages, range is 1.36 x 10E-8 - 6.6 x 10E-8 lb/ton	180
Tetrachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	Modular excess-air combustor	501001	2 x 10E-9 lb/ton feed	Dry sorbent injection after acid gas and PM control, one data point only	180
Tetrachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	2.2 x 10E-8 lb/ton feed	Capacity > 600 tons/day, ESP control only, overall average of several source averages, range is 9.2 x 10E-9 - 2.8 x 10E-8 lb/ton	180
Tetrachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	7.8 x 10E-8 lb/ton feed	Capacity > 600 tons/day, uncontrolled, overall average of several source averages, range is 2.2 x 10E-8 - 1.6 x 10E-7 lb/ton	180

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Tetrachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	Large mass burn rotary waterwall combustor built after 1980	501001	1.1 x 10E-8 lb/ton feed	Capacity > 400 tons/day, spray drying after acid gas and PM control, one data point only	180
Tetrachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	7.0 x 10E-9 lb/ton feed	Capacity < 400 tons/day, uncontrolled, one data point only	180
Tetrachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	3.2 x 10E-8 lb/ton feed	Capacity < 400 tons/day, ESP control only, overall average of several source averages, range is 1.26 x 10E-8 - 5.2 x 10E-8 lb/ton	180
Tetrachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	0.74 ug/Mg feed	Capacity < 400 tons/day, spray drying after acid gas and PM control, one data point only	180
Tetrachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	Mass burn waterwall combustor, small size new model to any age medium	501001	2.0 x 10E-8 lb/ton feed	Capacity < 400 tons/day, dry sorbent injection after acid gas and PM control, range is 1.08 x 10E-8 - 2.4 x 10E-8 lb/ton	180
Tetrachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	Mass burn waterwall combustor, built before 1980	501001	2.8 x 10E-6 lb/ton feed	ESP control only, overall average of several source averages, range is 6.4 x 10E-8 - 6.0 x 10E-6 lb/ton	180
Tetrachlorodibenzo-p-dioxins, total		4953	Municipal waste combustion	Mass burn, refractory facility	501001	3.4 x 10E-6 lb/ton feed	ESP control only, overall average of several source averages, range is 3.0 x 10E-6 - 3.6 x 10E-6 lb/ton	180
Tetrachlorodibenzo-p-dioxins, total		4953	Sewage sludge incineration	Multiple hearth furnace	50100504	1.584 x 10E-7 lb/ton dry sludge	Average of five tests, scrubber	181
Tetrachlorodibenzo-p-dioxins, total		806	Hospital waste incineration	Incinerator	50200509	0.33 x 10E-6 lb/ton feed	Uncontrolled, test data	147
Tetrachloroethylene	127184		Adhesives application	Entire process	40200701	2000 lb/ton PCE in adhesive applied	Uncontrolled, based on engineering judgement	68
Tetrachloroethylene	127184		Aerosol packaging	Entire process		7.4 lb/ton of PCE consumed	Uncontrolled, based on aggregate est. of emis. & consumption for 5 facilities' questionnaires	74,75
Tetrachloroethylene	127184		Aerosol products use	Entire process		2000 lb/ton of PCE in product applied	Uncontrolled, based on engineering judgement	68
Tetrachloroethylene	127184		Degreasing operations using PCE	Cold cleaner	40100304	1540 lb/ton of fresh (virgin) PCE used	Uncontrolled, based on material balance	76
Tetrachloroethylene	127184		Degreasing operations using PCE	Cold cleaner	40100304	1520 lb/ton of fresh (virgin) PCE used	Controlled by 0.7 freeboard ratio & drainage rack w/ 15 sec. drain time, based on material balance	76
Tetrachloroethylene	127184		Degreasing operations using PCE	Conveyorized vapor degreaser	40100223	1920 lb/ton of fresh (virgin) PCE used	Uncontrolled, based on material balance	76

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Tetrachloroethylene	127184		Degreasing operations using PCE	Conveyorized vapor degreaser	40100223	1820 lb/ton of fresh (virgin) PCE used	Controlled by carbon adsorber or refrigerated freeboard chiller, based on material balance	74
Tetrachloroethylene	127184		Degreasing operations using PCE	Open top vapor degreasers	40100203	1840 lb/ton of fresh (virgin) PCE used	Uncontrolled, based on material balance	74
Tetrachloroethylene	127184		Degreasing operations using PCE	Conveyorized vapor degreaser	40100223	0.08 lb/lb virgin PCE used	Ctrl hot vapor recycle or superheated vapor and sump cooling or freeboard refrigeration, est. from unctrl using mass bal	208
Tetrachloroethylene	127184		Degreasing operations using PCE	Cold cleaner	40100304	0.48 lb/lb virgin PCE used	Controlled by watercover and 15 sec. drain time, estimated from uncontrolled using mass balace, 16 hours downtime	208
Tetrachloroethylene	127184		Degreasing operations using PCE	Conveyorized vapor degreaser	40100223	0.89 lb/lb virgin PCE used	Ctrl carbon adsorbtion or freeboard refrigeration device w/sump cooling, est. from unctrl using mass bal, 16 hrs downtime	208
Tetrachloroethylene	127184		Degreasing operations using PCE	Open top vapor degreasers	40100203	0.87 lb/lb virgin PCE used	Controlled by hoist at 3fpm, auto cover, estimated from uncontrolled using mass balance, 16 hours downtime	208
Tetrachloroethylene	127184		Degreasing operations using PCE	Open top vapor degreasers	40100203	0.89 lb/lb virgin PCE used	Controlled by hoist at 11fpm, auto cover, estimated from uncontrolled using mass balance, 16 hours downtime	208
Tetrachloroethylene	127184		Degreasing operations using PCE	Open top vapor degreasers	40100203	0.84 lb/lb virgin PCE used	Controlled by hoist at 3fpm, freeboard refrigeration device, est from uncontrolled using mass balance, 16 hours downtime	208
Tetrachloroethylene	127184		Degreasing operations using PCE	Open top vapor degreasers	40100203	0.57 lb/lb virgin PCE used	Controlled by hoist at 3fpm, enclosed design w/sump cooling, est from uncontrolled using mass balance, 16 hours downtime	208
Tetrachloroethylene	127184		Degreasing operations using PCE	Conveyorized vapor degreaser	40100223	0.78 lb/lb virgin PCE used	Ctrl hot vapor recycle or superheated vapor and sump cooling or freeboard refrigeration, 8 hrs downtime, 7 days/week	208
Tetrachloroethylene	127184		Degreasing operations using PCE	Conveyorized vapor degreaser	40100223	0.90 lb/lb virgin PCE used	Ctrl by refrigeration device or carbon adsorption, either way w/ or wo/sump cooling, 8 hrs downtime, 7 days/week	208
Tetrachloroethylene	127184		Degreasing operations using PCE	Open top vapor degreasers	40100203	0.73 lb/lb virgin PCE used	Controlled by hoist at 3fpm with automated cover, 8 hours downtime.	208
Tetrachloroethylene	127184		Degreasing operations using PCE	Open top vapor degreasers	40100203	0.73 lb/lb virgin PCE used	Controlled by hoist at 3fpm with freeboard refrigeration device, 8 hours downtime.	208
Tetrachloroethylene	127184		Degreasing operations using PCE	Open top vapor degreasers	40100203	0.84-0.87 lb/lb virgin PCE used	Controlled by hoist at 11fpm with automated cover, represents 8 hours downtime.	208
Tetrachloroethylene	127184		Degreasing operations using PCE	Open top vapor degreasers	40100203	0.73-0.80 lb/lb virgin PCE used	Controlled by hoist at 11fpm enclose design with sump cooling, represents differences in downtime.	208

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Tetrachloroethylene	127184		Degreasing operations using PCE	Open top vapor degreasers	40100203	0.80-0.87 lb/lb virgin PCE used	Controlled by hoist at lifes and freeboard refrigeration device, represents differences in downtime.	208
Tetrachloroethylene	127184		Paint and coating application	Entire process	402	2000 lb/ton PCE in paint or coating appl	Uncontrolled, based on engineering judgement	48
Tetrachloroethylene	127184		Waste oil combustion	Waste oil-fired boilers (<150 million Btu/h) or space heaters	1	0.30 lb/1000 gal oil burned	Uncontrolled, based on emissions data and engineering judgement, assumes 97% DRE	55
Tetrachloroethylene	127184	2869	Chlorofluorocarbon 113 and 114 production	Equipment leak	30112780	3.4 tons/year	Two plants, estimated from uncontrolled (7.3 mg/year) using 40% control efficiency through monthly inspection	208
Tetrachloroethylene	127184	2869	Chlorofluorocarbon 113 and 114 production	Equipment leak	30112780	8.1 tons/year	Average of two plants, based on average emission factor method of estimating equipment leaks	208
Tetrachloroethylene	127184	2869	Chlorofluorocarbon 113 and 114 production	Storage	30112740	0.002 lb/ton	One plant, based on uncontrolled emission factor (.20 kg/MG) assuming refrigerated condensor, control efficiency of 85%	208
Tetrachloroethylene	127184	2869	Chlorofluorocarbon 113 and 114 production	Storage - contact internal floating roof	30112740	0.015 lb/ton CFC-113 produced	One plant, based on controlled PCE storage emission rate (660 kg/yr) divided by CFC-113 production rate (14,000 Mg/yr)	208
Tetrachloroethylene	127184	2869	Chlorofluorocarbon 113 and 114 production	Storage	30112740	0.064 lb/ton CFC-113 produced	One plant, based on PCE storage emission rate (4,400 kg/yr) divided by CFC-113 prod. rate (14,000 Mg/yr), uncontrolled	208
Tetrachloroethylene	127184	2869	Ethylene dichloride production	Storage of by-products	30112509	6 x 10E-4 lb/ton EDC produced	One plant, based on est annual emis divided by ethylene dichloride prod cap, controlled w/pressure vessel/incineration	208
Tetrachloroethylene	127184	2869	Perchloroethylene and trichloroethylene production	Oxychlorination process, distillation vent	301125	0.15 lb/ton of PCE and TCE produced	Uncontrolled, based on data from one producer	70
Tetrachloroethylene	127184	2869	Perchloroethylene and trichloroethylene production	Oxychlorination process, drying colum vent	301125	0.015 lb/ton of PCE and TCE produced	Factor includes TCE emissions, uncontrolled, based on data from one producer	70
Tetrachloroethylene	127184	2869	Perchloroethylene and trichloroethylene production	Process vents, oxychlorination process	30112520	0.002 lb/ton production capacity	One plant, based on est annual emis divided by PCE & TCE production capacity, control with scrubber	208
Tetrachloroethylene	127184	2869	Perchloroethylene and trichloroethylene production	Storage in fixed roof tanks, oxychlorination process	30112520	0.20 lb/ton PCE & TCE production capacity	One plant, based on est annual emis divided by PCE & TCE production capacity, control by condenser of some	208
Tetrachloroethylene	127184	2869	Perchloroethylene and trichloroethylene production	Handling, oxychlorination process	30112520	0.014 lb/ton PCE & TCE prod capacity	One plant, based on est annual emis divided by PCE & TCE production capacity, controlled by submerged fill pipe	208

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Tetrachloroethylene	127184	2869	Perchloroethylene and trichloroethylene production	Process fugitive, oxychlorination process	30112524	25.9 ton/yr	One plant, based on average emission factor method for estimating emissions, uncontrolled	208
Tetrachloroethylene	127184	2869	Perchloroethylene and trichloroethylene production	Equipment openings, oxychlorination process	30112524	0.004 lb/ton PCE & TCE prod capacity	One plant, based on est annual emis divided by PCE & TCE prod capacity, purged, washed, or cleaned prior to opening	208
Tetrachloroethylene	127184	2869	Perchloroethylene and trichloroethylene production	Relief device, oxychlorination process	30112520	0.002 lb/ton PCE & TCE prod capacity	One plant, based on est annual emis divided by PCE & TCE prod capacity, uncontrolled	208
Tetrachloroethylene	127184	2869	Perchloroethylene production	Chlorination of ethylene dichloride proc/distillation vent	30112521	0.198 lb/ton of PCE produced	Uncontrolled, based on data from one producer	70
Tetrachloroethylene	127184	2869	Perchloroethylene production	Chlorination of ethylene dichloride proc/neutralize & drying area vent	30112520	1.0 lb/ton of PCE produced	Uncontrolled, based on data from one producer	70
Tetrachloroethylene	127184	2869	Perchloroethylene production	Secondary, hydrocarbon chlorinolysis	30112520	0.016 lb/ton production capacity	Avg. of five plants, based on estimated annual emissions divided by PCE production capacity, unknown control, range is 0.0050 - 0.026 lb/ton	208
Tetrachloroethylene	127184	2869	Perchloroethylene production	Equipment openings, hydrocarbon chlorinolysis	30112520	0.04 lb/ton production capacity	Avg. of five plants,based on estimated annual emissions divided by PCE production capacity, unknown control, range is 0.00011 - 0.108 lb/ton	208
Tetrachloroethylene	127184	2869	Perchloroethylene production	Process fugitive, hydrocarbon chlorinolysis	30112524	14.99 - 66 tons/yr	Four plants, based on average emission factor method for estimating equipment leaks, unknown control	208
Tetrachloroethylene	127184	2869	Perchloroethylene production	Process fugitive, hydrocarbon chlorinolysis	30112524	0.491 tons/yr	One plant, based on emission testing, unknown control	208
Tetrachloroethylene	127184	2869	Perchloroethylene production	Handling, hydrocarbon chlorinolysis	30112520	0.12 lb/ton production capacity	Avg of five plants, based on est annual emis divided by PCE production cap., controlled w/submerged fill pipe, range is 0.06 - 1.78 lb/ton	208
Tetrachloroethylene	127184	2869	Perchloroethylene production	Storage, hydrocarbon chlorinolysis	30112520	0.8 lb/ton production capacity	Avg of five plants, based on estimated annual emissions divided by PCE production capacity, unknown control, range is 0.026 - 1.38 lb/ton	208
Tetrachloroethylene	127184	2869	Perchloroethylene production	Process vents, hydrocarbon chlorinolysis	30112520	0.12 lb/ton production capacity	Avg of five plants, based on estimated annual emissions divided by PCE production capacity, unknown control, range is 0.00008 - 0.40 lb/ton	208
Tetrachloroethylene	127184	2869	Perchloroethylene production - EDC chlorination	Secondary sources (wastewater, etc.)	30112520	0.0010 lb/ton production capacity	Avg of two plants, based on estimated annual emissions divided by PCE production capacity, unknown control, range is 0.0 - 0.002 lb/ton	208

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Tetrachloroethylene	127184	2869	Perchloroethylene production - EDC chlorination	Equipment openings	30112520	0.006 lb/ton production capacity	One plant, based on estimated annual emissions divided by PCE production capacity, uncontrolled	208
Tetrachloroethylene	127184	2869	Perchloroethylene production - EDC chlorination	Process fugitive emissions	30112524	121 tons/yr	Average of two plants, based on average emission factor method for estimating equipment leaks, unknown control, range is 88 - 152 ton/yr	208
Tetrachloroethylene	127184	2869	Perchloroethylene production - EDC chlorination	Handling	30112520	0.052 lb/ton production capacity	Avg of two plants, based on est annual emis divided by PCE production cap., controlled w/submerged fill pipe, range is 0.002 - 0.102 lb/ton	208
Tetrachloroethylene	127184	2869	Perchloroethylene production - EDC chlorination	Storage	30112520	1.24 lb/ton production capacity	Avg of two plants, based on est annual emis divided by PCE production capacity, unknown control, range is 0.48 - 2.0 lb/ton	208
Tetrachloroethylene	127184	2869	Perchloroethylene production - EDC chlorination	Process vents	30112520	0.42 lb/ton production capacity	Average of two plants, based on est annual emis divided by PCE production capacity, unknown control, range is 0.24 - 0.58 lb/ton	208
Tetrachloroethylene	127184	2869	Trichloroethylene production - EDC chlorination	Equipment openings	30112530	0.0016 lb/ton TCE production capacity	One plant, based on estimated annual emissions divided by production capacity, uncontrolled	208
Tetrachloroethylene	127184	2869	Trichloroethylene production - EDC chlorination	Process fugitive emissions	30112534	4.04 tons/yr	One plant, based on the average emission factor method for estimating equipment leaks, uncontrolled	208
Tetrachloroethylene	127184	2869	Trichloroethylene production - EDC chlorination	Handling	30112530	0 lb/ton production capacity	One plant, based on annual est emissions divided by prod capacity, controlled with scrubber, company claims 100% control	208
Tetrachloroethylene	127184	2869	Trichloroethylene production - EDC chlorination	Storage	30112530	0.004 lb/ton production capacity	One plant, based on annual estimated emissions divided by production capacity, unknown control	208
Tetrachloroethylene	127184	2869	Trichloroethylene production - EDC chlorination	Secondary sources (wastewater, etc.)	30112530	1.4 x 10E-5 lb/ton TCE production capacity	One plant, based on estimated annual emissions divided by production capacity, unknown control	208
Tetrachloroethylene	127184	2869	Vinyl chloride monomer production	Handling-transfer of heavy ends from distillation unit	30112540	0.0002 lb/ton VCM produced	One plant, based on estimated annual emissions divided by vinyl chloride monomer production capacity, uncontrolled	208
Tetrachloroethylene	127184	2869	Vinyl chloride monomer production	Storage in fixed roof tank	30112540	0.0004 lb/ton VCM produced	One plant, unknown control, average of 2 values, range is 4 x 10E-4 - 0.0012 lb/ton	208
Tetrachloroethylene	127184	2869	Vinyl chloride monomer production	Process vents	30112540	0.116 lb/ton VCM produced	One plant, based on estimated annual emissions divided by vinyl chloride monomer production capacity, unknown control	208

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Tetrachloroethylene	127184	2869	Vinyl chloride monomer production	Process vents	30112540	0.0001 lb/ton VCM produced	One plant, based on est annual emis divided by VCM production capacity, controlled by incineration at > 98% efficiency	208
Tetrachloroethylene	127184	4953	Sewage sludge incineration	Fluidized-bed furnace	50100504	1 x 10E-4 lb/ton dry sludge	One test, scrubber	101
Tetrachloroethylene	127184	4953	Sewage sludge incineration	Multiple hearth furnace	50100506	0.0196 lb/ton dry sludge	One test, scrubber	101
Tetrachloroethylene	127184	4953	Wastewater treatment	POTW	50100701	1400 lb/ton perchloroethylene in influen	Based on emis. modeling for 4-meth. POTW, represents average POTW that treats industrial wastewater	89
Tetrachloroethylene	127184	5169	Chemical distribution facilities	Handling emissions (filling losses)	4	0.2 lb/ton PCE distributed	Assumes partially controlled, based on nationwide emis. & distrib. est. for dist. fac. in 1983	48
Tetrachloroethylene	127184	5169	Chemical distribution facilities	Storage tank emissions	4	0.4 lb/ton PCE distributed	Assumes storage tanks uncontrolled, based on nationwide emis. & distrib. est. for dist. fac. in 1983	48
Tetrachloroethylene	127184	721	Dry cleaning, perchloroethylene	Fugitive emissions, dry-to-dry machine	40100101	41.2 lb/ton clothes cleaned	Uncontrolled, based on material balance, applies to coin-operated, commercial, & industrial sectors	194
Tetrachloroethylene	127184	721	Dry cleaning, perchloroethylene	Fugitive emissions, transfer machine	40100101	82.4 lb/ton clothes cleaned	Uncontrolled, based on material balance, applies to coin-operated, commercial, & industrial sectors	194
Tetrachloroethylene	127184	721	Dry cleaning, perchloroethylene	Process emissions, transfer or dry-to-dry machine	40100101	106.2 lb/ton clothes cleaned	Uncontrolled, based on material balance, applies to coin-operated, commercial, & industrial sectors	194
Tetrachloroethylene	127184	721	Dry cleaning, perchloroethylene	Process emissions, transfer or dry-to-dry machine	40100101	31.4 lb/ton clothes cleaned	Control, by refrig. condenser, material balance, applies to coin-oper./commer./& indust. sectors	194
Tetrachloroethylene	127184	721	Dry cleaning, perchloroethylene	Process emissions, transfer or dry-to-dry machine	40100101	9.2 lb/ton clothes cleaned	Control, by carbon adsorber, material balance, applies to coin-oper./commer./& indust. sectors	194
Tetrachloroethylene	127184	7699	Tank truck cleaning	Entire process	49004	0.474 lb/truck cleaned	Emission measurement	97
Tetrachloroethylene	127184	806	Hospital waste incineration	Incinerator	50200505	2.49 x 10E-4 lb/ton feed	Uncontrolled, test data	167
Tetraethylbenzene			Scrap tire, open burning	Tires in experimental burn hut		0.349 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr, uncontrolled	212
Thallium	7440280	3313	Ferroalloy production	Electric arc furnace, open, ferromanganese	30300701	0.0016 lb/mw-hr energy consumed by furnace	Uncontrolled	169
Thallium	7440280	3313	Ferroalloy production	Electric arc furnace, sealed, silicomanganese	30300702	6.6 x 10E-7 lb//mw-hr energy consumed by furnace	Controlled, venturi scrubber	169

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Thallium	7440280	3313	Ferroalloy production	Electric arc furnace, semi-sealed, ferrosilicon	30300702	0.00011 lb/mw-hr energy consumed by furnace	Uncontrolled	169
Thiophene	110021		Scrap tire, open burning	Tires in experimental burn hut		0.084 lb/ton tire	VOST samples burn rate - 1.9 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Thiophene	110021		Scrap tire, open burning	Tires in experimental burn hut		0.055 lb/ton tire	VOST samples burn rate - 2.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Thiophene	110021		Scrap tire, open burning	Tires in experimental burn hut		0.116 lb/ton tire	VOST samples burn rate - 1.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Thiophene	110021		Scrap tire, open burning	Tires in experimental burn hut		0.072 lb/ton tire	VOST samples burn rate - 1.4 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Thiophene	110021		Scrap tire, open burning	Tires in experimental burn hut		0.923 lb/ton tire	VOST samples burn rate - 0.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Thiophene	110021		Scrap tire, open burning	Tires in experimental burn hut		0.071 lb/ton tire	VOST samples burn rate - 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Tin	7440315	226	Woven fabric finishing	Curing oven - resin finish	330001	0.00156 lb/ton fabric	Uncontrolled, average of three tests	52
Tin	7440315	226	Woven fabric finishing	Heat setting	330001	0.00162 lb/ton fabric	Uncontrolled, based on test data	52
Tin	7440315	226	Woven fabric finishing	Tenter frames - resin finishing	330001	0.0038 lb/ton fabric	Uncontrolled, average of four tests	52
Tin	7440315	226	Woven fabric finishing	Thermosol dyeing	330001	6.8 x 10E-4 lb/ton fabric	Uncontrolled, average of three tests	52
Tin oxide	18282105	332	Iron foundries	Electric arc furnace - charge and tap cycle	30400304	0.028-0.042 lbs/ton of iron produced	Uncontrolled emissions	184
Tin oxide	18282105	332	Iron foundries	Electric arc furnace - melting/refining	30400304	0.28-4.2 lbs/ton of iron produced	Uncontrolled emissions	184
Titanium	7440326	226	Woven fabric finishing	Heat setting	330001	8 x 10E-7 lb/ton fabric	Uncontrolled, based on test data	52
Titanium oxide	13463677	3312	Steel production	AOD vessel - melt and refine cycle	303009	0.128 lbs/ton specialty steel	Uncontrolled emissions	198
Toluene	108883		Gasoline use	Automobile emissions		2.2 x 10E-5 lb/vehicle mile traveled	Engineering calculations	13
Toluene	108883		Internal combustion engines - mobile	Automobile emissions		8.46 x 10E-4 lb/vehicle mile traveled	Engineering calculations	13
Toluene	108883		Paint and coating application	Entire process	40200101	2000 lb/ton used	Assume all toluene is eventually released to atmosphere	13

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Toluene	108883		Scrap tire, open burning	Tires in experimental burn hut		2.858 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.3 kg/hr, uncontrolled	212
Toluene	108883		Scrap tire, open burning	Tires in experimental burn hut		2.709 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr, uncontrolled	212
Toluene	108883		Scrap tire, open burning	Tires in experimental burn hut		3.599 lb/ton tire	XAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 1.7 kg/hr, uncontrolled	212
Toluene	108883		Scrap tire, open burning	Tires in experimental burn hut		1.269 lb/ton tire	XAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 2.3 kg/hr, uncontrolled	212
Toluene	108883		Scrap tire, open burning	Tires in experimental burn hut		0.198 lb/ton tire	VOST samples burn rate = 1.9 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Toluene	108883		Scrap tire, open burning	Tires in experimental burn hut		1.971 lb/ton tire	VOST samples burn rate = 2.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Toluene	108883		Scrap tire, open burning	Tires in experimental burn hut		2.661 lb/ton tire	VOST samples burn rate = 0.9 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Toluene	108883		Scrap tire, open burning	Tires in experimental burn hut		1.99 lb/ton tire	VOST samples burn rate = 1.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Toluene	108883		Scrap tire, open burning	Tires in experimental burn hut		1.89 lb/ton tire	VOST samples burn rate = 1.4 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Toluene	108883		Scrap tire, open burning	Tires in experimental burn hut		3.18 lb/ton tire	VOST samples burn rate = 0.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Toluene	108883		Scrap tire, open burning	Tires in experimental burn hut		12.12 lb/ton tire	VOST samples burn rate = 0.9 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Toluene	108883		Scrap tire, open burning	Tires in experimental burn hut		2.051 lb/ton tire	VOST samples burn rate = 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Toluene	108883		Scrap tire, open burning	Tires in experimental burn hut		1.813 lb/ton tire	VOST samples burn rate = 3.8 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Toluene	108883		Scrap tire, open burning	Tires in experimental burn hut		1.71 lb/ton tire	VOST samples burn rate = 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Toluene	108883		Scrap tire, open burning	Tires in experimental burn hut		0.597 lb/ton tire	VOST samples burn rate = 2.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Toluene	108883		Scrap tire, open burning	Tires in experimental burn hut		0.758 lb/ton tire	VOST samples burn rate = 4.43 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Toluene	108883		Solvent application	Thinning solvent, toluene	40200922	2000 lb/ton used	Assume all toluene is eventually released to atmosphere	13
Toluene	108883		Waste oil combustion	Waste oil-fired boilers (<150 million Btu/h) or space heaters	1	0.30 lb/1000 gal oil burned	Uncontrolled, based on emissions data and engineering judgement, assumes 97% DRE	99

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Toluene	108883		Wood combustion, residential	Small airtight woodstoves, birch wood		0.0334 lb/ton dry fuel burned	Normal high-temperature burning conditions, based on emission tests	57
Toluene	108883		Wood combustion, residential	Small airtight woodstove, birch wood		4.546 lb/ton dry fuel burned	Starved air conditions, based on emission tests	57
Toluene	108883		Wood combustion, residential	Small airtight woodstoves, spruce wood		0.768 lb/ton dry fuel burned	Starved air conditions, based on emission tests	57
Toluene	108883	191	Agricultural industry-field burning of plastic crop covers	Used black plastic		0.179 ug/m3	Experimental simulation, plastic sheet = 1 lb., GC/FID test from VOST samples, avg. of 2 values, range is 0.075 - 0.282 ug/m3	210
Toluene	108883	191	Agricultural industry-field burning of plastic crop covers	Unused black plastic		0.144 ug/m3	Experimental simulation, plastic sheet = 1 lb., GC/FID test from VOST samples, avg. of 2 values, range is 0.104 - 0.183 ug/m3	210
Toluene	108883	2491	Wood preserving	Incineration of waste	307005	Not detectable	Controlled with baghouse	6
Toluene	108883	2491	Wood preserving	Thermal (pan) evaporation of pentachlorophenol wastewater		<5 ug/ml gas vented	Average value	6
Toluene	108883	28	Industrial wastewater treatment	Weir	301	0.25 x mass of pollutant in waste stream	Uncontrolled emissions	208
Toluene	108883	28	Industrial wastewater treatment	Oil-water separator	301	0.47 x mass of pollutant in waste stream	Uncontrolled emissions	208
Toluene	108883	28	Industrial wastewater treatment	Treatment tank	301	9.2 x 10E-3 x mass of pollutant in waste stream	Uncontrolled emissions	208
Toluene	108883	28	Industrial wastewater treatment	Non-aerated biobasin	301	0.060 x mass of pollutant in waste stream	Uncontrolled emissions	208
Toluene	108883	28	Industrial wastewater treatment	Aerated biobasin	301	0.12 x mass of pollutant in waste stream	Uncontrolled emissions	208
Toluene	108883	28	Industrial wastewater treatment	Clarifier	301	0.025 x mass of pollutant in waste stream	Uncontrolled emissions	208
Toluene	108883	28	Industrial wastewater treatment	Aerated equalization basin	301	0.99 x mass of pollutant in waste stream	Uncontrolled emissions	208
Toluene	108883	28	Industrial wastewater treatment	Non-aerated equalization basin	301	0.40 x mass of pollutant in waste stream	Uncontrolled emissions	208
Toluene	108883	28	Industrial wastewater treatment	Open trench	301	0.045 x mass of pollutant in waste stream	Uncontrolled emissions	208
Toluene	108883	28	Industrial wastewater treatment	Sump	301	8.0 x 10E-3 x mass of pollutant in waste stream	Uncontrolled emissions	208

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Toluene	108883	28	Industrial wastewater treatment	Lift station	301	0.29 x mass of pollutant in waste stream	Uncontrolled emissions	206
Toluene	108883	28	Industrial wastewater treatment	Junction box	301	0.098 x mass of pollutant in waste stream	Uncontrolled emissions	206
Toluene	108883	28	Industrial wastewater treatment	Manhole	301	0.0082 x mass of pollutant in waste stream	Uncontrolled emissions	206
Toluene	108883	28	Industrial wastewater treatment	Drain	301	0.061 x mass of pollutant in waste stream	Uncontrolled emissions	206
Toluene	108883	2822	Neoprene manufacture	Batch polyvatties	301026	0.034 lb/ton neoprene	Engineering judgement	123
Toluene	108883	2822	Neoprene manufacture	Blend tanks	30102614	0.1 lb/ton neoprene	Engineering judgement	123
Toluene	108883	2822	Neoprene manufacture	Dryer exhaust	30102609	4.0 lb/ton neoprene	Engineering judgement	123
Toluene	108883	2822	Neoprene manufacture	Solution makeup tank	30126	0.08 lb/ton neoprene	Engineering judgement	123
Toluene	108883	2822	Neoprene manufacture	Strippers	30102611	0.038 lb/ton neoprene	Engineering judgement	123
Toluene	108883	2822	Neoprene manufacture	Wash belts	30126	0.3 lb/ton neoprene	Engineering judgement	123
Toluene	108883	2869	Benzaldehyde production	Fugitive emissions	301	0.4 lb/ton used	Engineering estimate	13
Toluene	108883	2869	Benzaldehyde production	Process - general	301	1.8 lb/ton used	Engineering estimate	13
Toluene	108883	2869	Benzaldehyde production	Storage	407172	0.8 lb/ton used	Engineering estimate	13
Toluene	108883	2869	Benzene production	General emissions	30129801	0.1 lb/ton used	From State air emission files	13
Toluene	108883	2869	Benzene production	Storage	407036	0.2 lb/ton used	From State air emission files	13
Toluene	108883	2869	Benzoic acid production	Fugitive emissions	301	0.2 lb/ton used	Engineering estimate	13
Toluene	108883	2869	Benzoic acid production	Process - general	301	2.0 lb/ton used	Engineering estimate	13
Toluene	108883	2869	Benzoic acid production	Storage	407040	0.08 lb/ton used	Engineering estimate	13
Toluene	108883	2869	Benzyl chloride production	Fugitive emissions	301	0.3 lb/ton used	Engineering estimate	13
Toluene	108883	2869	Benzyl chloride production	Process - general	301	1.10 lb/ton used	Engineering estimate	13
Toluene	108883	2869	Benzyl chloride production	Storage	407060	0.6 lb/ton used	Engineering estimate	13
Toluene	108883	2869	Cresol(o-) production	Fugitive emissions	301	0.6 lb/ton used	Engineering estimate	13

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Toluene	108883	2865	Cresol(p-) production	Process - general	301	2.4 lb/ton used	Engineering estimate	13
Toluene	108883	2865	Cresol(p-) production	Storage	407036	1.0 lb/ton used	Engineering estimate	13
Toluene	108883	2865	Toluene diisocyanate production	Fugitive emissions	30118180	0.38 lb/ton used	Engineering estimate	13
Toluene	108883	2865	Toluene diisocyanate production	General emissions	30118101	1.54 lb/ton used	Engineering estimate	13
Toluene	108883	2865	Toluene diisocyanate production	Storage	407044	0.44 lb/ton used	Engineering estimate	13
Toluene	108883	2865	Toluene production	General emissions	30125805	0.34 lb/ton produced	Average of four values given for four different processes	13
Toluene	108883	2865	Toluene production	Storage	407036	0.93 lb/ton produced	Average of four values given for four different processes	13
Toluene	108883	2865	Vinyl toluene production	Fugitive emissions	301	0.3 lb/ton used	Engineering estimate	13
Toluene	108883	2865	Vinyl toluene production	Process - general	301	1.1 lb/ton used	Engineering estimate	13
Toluene	108883	2865	Vinyl toluene production	Storage	407036	0.6 lb/ton used	Engineering estimate	13
Toluene	108883	2865	Xylene (mixed) production, toluene disproportionation	Fugitive emissions	301258	0.1 lb/ton used	Engineering estimate	13
Toluene	108883	2865	Xylene (mixed) production, toluene disproportionation	Process - general	301258	0.1 lb/ton used	Engineering estimate	13
Toluene	108883	2865	Xylene (mixed) production, toluene disproportionation	Storage	407036	0.2 lb/ton used	Engineering estimate	13
Toluene	108883	2869	Phosgene production by chlorination of CO	Absorption		7.5 lb/ton produced	Control uncertain, based on tests and mass balance	99
Toluene	108883	2911	Petroleum refinery with cracking/reforming	Fugitive emissions	306	21 lb/ton total HC	Assumes fugitives are 1.05% toluene	92
Toluene	108883	2911	Petroleum refinery without cracking/reforming	Fugitive emissions	306	2.1 lb/ton total HC	Assumes toluene is 0.105% of THC	92
Toluene	108883	2911	Toluene production via catalytic reformate	Cracking unit	306002	0.04 lb/ton produced		13
Toluene	108883	3312	Coke production	Coke oven	303003	0.48 lb/ton coke produced		13

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Toluene	108883	4953	Land treatment	Petroleum refinery sludge	50300820	3.08 lb/hectare-hr	Emissions measured within 1 hr. of sludge application to landfill	12
Toluene	108883	4953	Sewage sludge incineration	Fluidized-bed furnace	50100506	1.4 x 10E-4 lb/ton dry sludge	One test, scrubber	101
Toluene	108883	4953	Sewage sludge incineration	Multiple hearth furnace	50100506	0.0172 lb/ton dry sludge	Average of five tests, scrubber	101
Toluene	108883	4953	Solvent recycling facility	Evaporation pond	490002	1.38 lb/hectare-hr	Based on two different sampling methods at the same site	12
Toluene	108883	4953	Wastewater treatment	POTW	50100701	1160 lb/ton toluene in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
Toluene	108883	5541	Gasoline marketing activities	Automobile refueling displacement losses	40600401	0.0994 lb/ton gasoline consumed	Engineering calculations	13
Toluene	108883	5541	Gasoline marketing activities	Vehicle refueling, vapor loss	40600301	0.176 lb/gal of gas pumped	Listed as toluene/2,3-dimethylhexane emission rate	4
1,2,4-Trichlorobenzene	120821	2491	Wood preserving	Application and handling of 1,2,4-TCB containing preservative	307	20 lbs/ton 1,2,4-TCB used	Based on emissions estimate of <1% lost of total use	48
1,2,4-Trichlorobenzene	120821	2879	Pesticide intermediates manufacture - Dicamba	Fugitives and handling emissions	301033	20 lbs/ton pesticide produced	Based on emissions estimate of <1% lost total production	48
1,2,4-Trichlorobenzene	120821	2879	Pesticide intermediates manufacture - Stirofos	Fugitives and handling emissions	301033	20 lbs/ton pesticide produced	Based on emissions estimate of <1% lost total production	48
1,2,4-Trichlorobenzene	120821	36	Dielectric fluid use in electrical apparatus	Fugitive emissions	313	0.116 lbs/ton fluid used	Based on material balance	48
1,2,4-Trichlorobenzene	120821	4953	Sewage sludge incineration	Fluidized-bed furnace	50100506	<5.6 x 10E-5 lb/ton dry sludge	One test, scrubber	101
1,2,4-Trichlorobenzene	120821	4953	Sewage sludge incineration	Multiple hearth furnace	50100506	<0.00218 lb/ton dry sludge	Average of two tests, scrubber	101
1,2,4-Trichlorobenzene	120821	4953	Wastewater treatment	POTW	50100701	740 lb/ton 1,2,4-trichlorob. in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
Trichlorobenzene (VAN)	12002481	226	Woven fabric finishing	Curing oven - resin finish	330001	1.28 x 10E-4 lb/ton fabric	Uncontrolled, one test	52
Trichlorobenzene (VAN)	12002481	226	Woven fabric finishing	Tenter frames - resin finish	330001	0.76 lb/ton fabric	Uncontrolled, based on one test	52
Trichlorobenzene (VAN)	12002481	226	Woven fabric finishing	Thermosol dyeing	330001	0.00136 lb/ton fabric	Uncontrolled, one test	52

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Trichlorodibenzofurans, total		4953	Sewage sludge incineration	Multiple hearth furnace	50100506	1.456 x 10E-6 lb/ton dry sludge	Average of two tests, scrubber	101
Trichlorodibenzo-p-dioxin s, total		4953	Sewage sludge incineration	Multiple hearth furnace	50100506	3.134 x 10E-7 lb/ton dry sludge	Average of two tests, scrubber	101
1,1,1-Trichloroethane	71556		Degreasing operations using methyl chloroform	Entire process	40100	0.03 lb/ton methyl chloroform	Based on 3% wt. in methyl chloroform	93
1,1,1-Trichloroethane	71556		Degreasing operations using methyl chloroform	Cold cleaner	40100305	1720 lb/ton (fresh) virgin solvent used	Uncontrolled, considers recycle, based on material balance	102
1,1,1-Trichloroethane	71556		Degreasing operations using methyl chloroform	Cold cleaner	40100305	1480 lb/ton (fresh) virgin solvent used	Control, by 0.7 freeboard ratio + drainage rack w/ 15 sec. drain time, considers recy., mater. bal.	102
1,1,1-Trichloroethane	71556		Degreasing operations using methyl chloroform	Conveyorized vapor degreaser	40100222	1920 lb/ton (fresh) virgin solvent used	Uncontrolled, considers recycle, based on material balance	76
1,1,1-Trichloroethane	71556		Degreasing operations using methyl chloroform	Conveyorized vapor degreaser	40100222	1820 lb/ton (fresh) virgin solvent used	Controlled by carbon adsorber or refrig. freeboard chiller, considers recycle, material balance	76
1,1,1-Trichloroethane	71556		Degreasing operations using methyl chloroform	Open top vapor degreasers	40100202	1840 lb/ton (fresh) virgin solvent used	Uncontrolled, considers recycle, based on material balance	76
1,1,1-Trichloroethane	71556		Degreasing operations using methyl chloroform	Open top vapor degreasers	40100202	1780 lb/ton (fresh) virgin solvent used	Controlled by refrigerated freeboard chiller, considers recycle, based on material balance	76
1,1,1-Trichloroethane	71556		Solvent application	General emissions	401	2000 lb/ton used	Assume all is eventually released to atmosphere	13
1,1,1-Trichloroethane	71556		Waste oil combustion	Waste oil-fired boilers (<150 million Btu/h) or space heaters	1	0.325 lb/1000 gal oil burned	Uncontrolled, based on emissions data and engineering judgement, assumes 97% DRE	98
1,1,1-Trichloroethane	71556	2869	Ethylene dichloride production - oxyhydrochlorination	Absorption	30112501	0.01 lb/ton produced	Control unclear, based on mass balance and testing	95
1,1,1-Trichloroethane	71556	2869	Methyl chloroform production	Condenser vents/distillation column	30112528	1.44 lb/ton produced	From State air emission files	13
1,1,1-Trichloroethane	71556	2869	Methyl chloroform production	Fugitive emissions/equipment leaks	30112529	2 lb/ton produced	Engineering estimate	13
1,1,1-Trichloroethane	71556	2869	Methyl chloroform production	Storage	407220	4.84 lb/ton produced	From State air emission files	13
1,1,1-Trichloroethane	71556	2869	Methyl chloroform production by hydrochlorination	Heat transfer	30112525	10 lb/ton produced	Control uncertain, based on mass balance and tests	95
1,1,1-Trichloroethane	71556	2869	Methyl chloroform production by hydrochlorination	Separation unit	30112526	1 lb/ton produced	Control uncertain, based on mass balance and tests	95

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
1,1,1-Trichloroethane	71556	2869	Methyl chloroform production from ethane	Distillation vent	30112528	0.28 lb/ton methyl chloroform produced	Uncontrolled, based on hypothetical plant with 4.5 x 10E7 lb/yr production capacity	1
1,1,1-Trichloroethane	71556	2869	Methyl chloroform production from ethane	Distillation vent	30112528	0.006 lb/ton methyl chloroform produced	Controlled by incinerator, based on hypothetical plant with 4.5 x 10E7 lb/yr production capacity	1
1,1,1-Trichloroethane	71556	2869	Methyl chloroform production from ethane	Handling (loading of tank trucks and tank cars)	301125	1.22 lb/ton methyl chloroform produced	Assumes submerged loading, based on hypothetical plant with 4.5 x 10E7 lb/yr production capacity	1
1,1,1-Trichloroethane	71556	2869	Methyl chloroform production from ethane	Handling (loading of tank trucks and tank cars)	301125	0.18 lb/ton methyl chloroform produced	Controlled by refrig. condenser, based on hypothetical plant with 4.5 x 10E7 lb/yr production cap.	1
1,1,1-Trichloroethane	71556	2869	Methyl chloroform production from ethane	Product storage tank vents	407220	0.8 lb/ton methyl chloroform produced	Uncontrolled, based on hypothetical plant with 4.5 x 10E7 lb/yr production capacity	1
1,1,1-Trichloroethane	71556	2869	Methyl chloroform production from ethane	Product storage tank vents	407220	0.122 lb/ton methyl chloroform produced	Controlled by refrig. condenser, based on hypothetical plant with 4.5 x 10E7 lb/yr production cap.	1
1,1,1-Trichloroethane	71556	2869	Methyl chloroform production from ethane	Recycle storage tank vents	30112525	0.18 lb/ton methyl chloroform produced	Uncontrolled, based on hypothetical plant with 4.5 x 10E7 lb/yr production capacity	1
1,1,1-Trichloroethane	71556	2869	Methyl chloroform production from ethane	Recycle storage tank vents	30112525	0.02 lb/ton methyl chloroform produced	Controlled by refrig. condenser, based on hypothetical plant with 4.5 x 10E7 lb/yr production cap.	1
1,1,1-Trichloroethane	71556	2869	Methyl chloroform production from vinyl chloride	Handling (loading of tank trucks and tank cars)	301125	1.22 lb/ton methyl chloroform produced	Assumes submerged loading, based on hypothetical plant with 3 x 10E8 lb/yr production capacity	1
1,1,1-Trichloroethane	71556	2869	Methyl chloroform production from vinyl chloride	Handling (loading of tank trucks and tank cars)	301125	0.18 lb/ton methyl chloroform produced	Controlled by refrig. condenser, based on hypothetical plant with 3 x 10E8 lb/yr production capacity	1
1,1,1-Trichloroethane	71556	2869	Methyl chloroform production from vinyl chloride	Intermediate process storage tank vents	30112525	0.18 lb/ton methyl chloroform produced	Uncontrolled, based on hypothetical plant with 3 x 10E8 lb/yr production capacity	1
1,1,1-Trichloroethane	71556	2869	Methyl chloroform production from vinyl chloride	Intermediate process storage tank vents	30112525	0.02 lb/ton methyl chloroform produced	Controlled by refrig. condenser, based on hypothetical plant with 3 x 10E8 lb/yr production capacity	1
1,1,1-Trichloroethane	71556	2869	Methyl chloroform production from vinyl chloride	Product storage tank vents	407220	0.80 lb/ton methyl chloroform produced	Uncontrolled, based on hypothetical plant with 3 x 10E8 lb/yr production capacity	1
1,1,1-Trichloroethane	71556	2869	Methyl chloroform production from vinyl chloride	Product storage tank vents	407220	0.122 lb/ton methyl chloroform produced	Controlled by refrig. condenser, based on hypothetical plant with 3 x 10E8 lb/yr production capacity	1
1,1,1-Trichloroethane	71556	4953	Sewage sludge incineration	Fluidized-bed furnace	50100504	8 x 10E-8 lb/ton dry sludge	One test, scrubber	101

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1,1,1-Trichloroethane	71556	4953	Sewage sludge incineration	Multiple hearth furnace	50100504	0.0026 lb/ton dry sludge	Average of six tests, scrubber	101
1,1,1-Trichloroethane	71556	4953	Wastewater treatment	POTW	50100701	1220 lb/ton methyl chloroform in influen	Based on calc. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	89
Trichloroethylene	79016		Adhesives application	Entire process	40200701	2000 lb/ton TCE in adhesive applied	Uncontrolled, based on engineering judgement	105
Trichloroethylene	79016		Degreasing operations using TCE	Cold cleaner	40100306	1680 lb/ton fresh (virgin) TCE used	Uncontrolled, based on material balance	76
Trichloroethylene	79016		Degreasing operations using TCE	Cold cleaner	40100306	1440 lb/ton fresh (virgin) TCE used	Controlled by 0.7 freeboard ratio & drainage rack w/ 15 sec. drain time, based on material balance	76
Trichloroethylene	79016		Degreasing operations using TCE	Conveyorized vapor degreaser	40100229	1920 lb/ton fresh (virgin) TCE used	Uncontrolled, based on material balance	76
Trichloroethylene	79016		Degreasing operations using TCE	Conveyorized vapor degreaser	40100229	1820 lb/ton fresh (virgin) TCE used	Controlled by carbon absorber or refrigerated freeboard chiller, based on material balance	76
Trichloroethylene	79016		Degreasing operations using TCE	Open top vapor degreasers	40100205	1860 lb/ton fresh (virgin) TCE used	Uncontrolled, based on material balance	76
Trichloroethylene	79016		Degreasing operations using TCE	Open top vapor degreasers	40100205	1780 lb/ton fresh (virgin) TCE used	Controlled by above or below freezing refrigerated freeboard chiller, based on material balance	76
Trichloroethylene	79016		Degreasing operations using TCE	Conveyorized vapor degreaser	40100229	0.90 lb/lb fresh TCE used	Ctrl carbon adsorbtion or freeboard refrigeration device with or without sump cooling, 8 hrs downtime, 7 days/week	208
Trichloroethylene	79016		Degreasing operations using TCE	Conveyorized vapor degreaser	40100229	0.78 lb/lb fresh TCE used	Ctrl by sump cooling or freeboard refrigeration with hot vapor recycle or superheated vapor, 8 hrs downtime, 7 days/week	208
Trichloroethylene	79016		Degreasing operations using TCE	Open top vapor degreasers	40100205	0.73 lb/lb fresh TCE used	Controlled by hoist at 3fpm with freeboard refrigeration device or automated cover, 8 hours downtime	208
Trichloroethylene	79016		Degreasing operations using TCE	Open top vapor degreasers	40100205	0.84-0.87 lb/lb fresh TCE used	Controlled by hoist at 11fpm with automated cover, 8 hours downtime.	208
Trichloroethylene	79016		Degreasing operations using TCE	Open top vapor degreasers	40100205	0.73-0.80 lb/lb fresh TCE used	Controlled by hoist at 11fpm with enclosed design and sump cooling, 8 hours downtime.	208
Trichloroethylene	79016		Degreasing operations using TCE	Open top vapor degreasers	40100205	0.80-0.87 lb/lb fresh TCE used	Controlled by hoist at 11fpm with freeboard refrigeration device, 8 hours downtime.	208
Trichloroethylene	79016		Degreasing operations using TCE	Cold cleaner	40100306	0.72 lb/lb fresh TCE used	Controlled by water cover and 15 seconds draintime, 16 hours downtime.	208

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Trichloroethylene	79016		Degreasing operations using TCE	Conveyorized vapor degreaser	40100225	0.08 lb/lb fresh TCE used	Controlled by sump cooling or freeboard refrigeration with hot vapor recycle or superheated vapor, 16 hrs downtime	208
Trichloroethylene	79016		Degreasing operations using TCE	Conveyorized vapor degreaser	40100225	0.09 lb/lb fresh TCE used	Controlled by carbon adsorption or freeboard refrigeration device, with sump cooling, 16 hrs downtime	208
Trichloroethylene	79016		Degreasing operations using TCE	Open top vapor degreasers	40100205	0.09 lb/lb fresh TCE used	Controlled by hoist at 3fpm with automated cover, 16 hrs downtime	208
Trichloroethylene	79016		Degreasing operations using TCE	Open top vapor degreasers	40100205	0.73 lb/lb fresh TCE used	Controlled by hoist at 3fpm with enclosed design and sump cooling, 16 hrs downtime	208
Trichloroethylene	79016		Degreasing operations using TCE	Open top vapor degreasers	40100205	0.87 lb/lb fresh TCE used	Controlled by hoist at 3fpm with freeboard refrigeration device, 16 hrs downtime	208
Trichloroethylene	79016		Degreasing operations using TCE	Open top vapor degreasers	40100205	0.90 lb/lb fresh TCE used	Controlled by hoist at 11fpm with automated cover, 16 hrs downtime	208
Trichloroethylene	79016		Degreasing operations using TCE	Open top vapor degreasers	40100205	0.97 lb/lb fresh TCE used	Controlled by hoist at 3fpm with enclosed design and sump cooling, 8 hrs downtime	208
Trichloroethylene	79016		Paint and coating application	Entire process	402	2000 lb/ton TCE in paint or coating used	Uncontrolled, based on engineering judgement	105
Trichloroethylene	79016		Waste oil combustion	Waste oil-fired boilers (<150 million Btu/h) or space heaters	1	0.289 lb/1000 gal oil burned	Uncontrolled, based on emissions data and engineering judgement, assumes 97% DRE	95
Trichloroethylene	79016	2821	Polyvinyl chloride production	PVC suspension process using TCE as a reaction chain transfer agent	30101801	40 lb/ton of TCE consumed	Control status unspecified, based on aggregate emis. & consumption totals for PVC producers in 1978	105
Trichloroethylene	79016	2869	Ethylene dichloride production	Process vents	30112909	8.0 x 10E-8 lb/ton EDC produced	One plant, based on est annual emissions divided by EDC production capacity, incineration control at > 98% efficiency	208
Trichloroethylene	79016	2869	Ethylene dichloride production - direct chlorination	Absorption	30112902	0.02 lb/ton produced	Control uncertain, based on tests and mass balance	95
Trichloroethylene	79016	2869	Perchloroethylene and trichloroethylene production	Oxychlorination process, distillation vent	301125	0.18 lb/ton PCE & TCE produced	Uncontrolled, based on data from one producer	104
Trichloroethylene	79016	2869	Perchloroethylene and trichloroethylene production	Oxychlorination process, drying column vent	301125	0.015 lb/ton PCE & TCE produced	Emis. factor may include PCE emis., control status unspecified, based on data for one plant	104
Trichloroethylene	79016	2869	Perchloroethylene and trichloroethylene production	Process vents, oxychlorination process	30112930	0.024 lb/ton PCE & TCE prod capacity	One plant, based on estimated annual emissions divided by PCE & TCE prod capacity, scrubber control	208

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Trichloroethylene	79016	2869	Perchloroethylene and trichloroethylene production	Storage - fixed roof tank, oxychlorination process	30112530	0.281 lb/ton PCE & TCE prod capacity	One plant, based on estimated annual emissions divided by PCE & TCE prod capacity, condenser control w/75% efficiency	208
Trichloroethylene	79016	2869	Perchloroethylene and trichloroethylene production	Handling, oxychlorination process	30112530	0.0401 lb/ton PCE & TCE prod capacity	One plant, based on estimated annual emissions divided by PCE & TCE prod capacity, controlled by submerged fill pipe	208
Trichloroethylene	79016	2869	Perchloroethylene and trichloroethylene production	Process fugitive, oxychlorination process	30112534	35.38 ton/yr	One plant, based on average emission factor method for estimating equipment leaks	208
Trichloroethylene	79016	2869	Perchloroethylene and trichloroethylene production	Equipment openings, oxychlorination process	30112534	0.032 lb/ton PCE & TCE prod capacity	One plant, based on est annual emis divided by PCE & TCE prod cap, control by purge, wash or clean prior to opening	208
Trichloroethylene	79016	2869	Perchloroethylene and trichloroethylene production	Relief device, oxychlorination process	30112534	0.0004 lb/ton PCE & TCE prod capacity	One plant, based on estimated annual emissions divided by PCE & TCE production capacity, uncontrolled	208
Trichloroethylene	79016	2869	Perchloroethylene and trichloroethylene production	Secondary, oxychlorination process	30112530	0.0781 lb/ton PCE & TCE prod capacity	One plant, based on estimated annual emissions divided by PCE & TCE production capacity, uncontrolled	208
Trichloroethylene	79016	2869	Perchloroethylene production by chlorination process	Distillation vent	30112521	0.112 lb/ton PCE produced	Control status unspecified, based on data from one plant	104
Trichloroethylene	79016	2869	Perchloroethylene production by chlorination process	Neutralization and drying area vent	30112530	0.22 lb/ton PCE produced	Control status unspecified, based on data from one plant	104
Trichloroethylene	79016	2869	Trichloroethylene production	Fugitive emissions	30112534	1.8 lb/ton produced	Engineering estimate	13
Trichloroethylene	79016	2869	Trichloroethylene production	Process - general	30112530	1.024 lb/ton produced	Derived from State air emission files	13
Trichloroethylene	79016	2869	Trichloroethylene production	Storage	407040	1.42 lb/ton produced	Derived from State air emission files	13
Trichloroethylene	79016	2869	Trichloroethylene production - EDC chlorination	Secondary sources (wastewater, etc.)	30112530	0.0004 lb/ton production capacity	One plant, based on estimated annual emissions divided by production capacity, uncontrolled	208
Trichloroethylene	79016	2869	Trichloroethylene production - EDC chlorination	Equipment openings	30112530	0.008 lb/ton production capacity	One plant, based on estimated annual emissions divided by production capacity, uncontrolled	208
Trichloroethylene	79016	2869	Trichloroethylene production - EDC chlorination	Equipment openings	30112534	24.84 ton/yr	One plant, based on the average emission factor method for estimating equipment leaks, unknown control	208

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Trichloroethylene	79016	2869	Trichloroethylene production - EDC chlorination	Handling	30112530	0.38 lb/ton TCE production capacity	One plant, based upon estimated annual emissions divided by production capacity, uncontrolled	208
Trichloroethylene	79016	2869	Trichloroethylene production - EDC chlorination	Storage	30112530	0.46 lb/ton TCE production capacity	One plant, based upon estimated annual emissions divided by production capacity, unknown control	208
Trichloroethylene	79016	2869	Trichloroethylene production - EDC chlorination	Process vent other than distillation	30112530	0.002 lb/ton TCE production capacity	One plant, based upon estimated annual emissions divided by production capacity, unknown control	208
Trichloroethylene	79016	2869	Trichloroethylene production - EDC chlorination	Distillation column	30112531	0.006 lb/ton TCE production capacity	One plant, based upon estimated annual emissions divided by production capacity, uncontrolled	208
Trichloroethylene	79016	2869	Trichloroethylene production by oxyhydrochlorination process	Absorption	30112530	17 lb/ton produced	Control unclear, based on mass balance and testing	99
Trichloroethylene	79016	2869	Vinyl chloride monomer production	Secondary sources (wastewater, etc.)	30112543	0.0001 lb/ton VCM produced	One plant, based on estimated annual emissions divided by vinyl chloride monomer production capacity, uncontrolled	208
Trichloroethylene	79016	2869	Vinyl chloride monomer production	Handling - transfer of heavy ends from edc distillation column	30112540	2.0 x 10E-5 lb/ton VCM produced	One plant, based on estimated annual emissions divided by vinyl chloride monomer production capacity	208
Trichloroethylene	79016	2869	Vinyl chloride monomer production	Storage in fixed roof tank	30112540	0.0004 lb/ton VCM produced	One plant, based on estimated annual emissions divided by vinyl chloride monomer production capacity, uncontrolled	208
Trichloroethylene	79016	2869	Vinyl chloride monomer production	Process vents	30112540	1.6 x 10E-4 lb/ton VCM produced	One plant, based on est annual emissions divided by VCM production capacity, incineration control at > 98% efficiency	208
Trichloroethylene	79016	4953	Sewage sludge incineration	Fluidized-bed furnace	50100504	2 x 10E-5 lb/ton dry sludge	One test, scrubber	101
Trichloroethylene	79016	4953	Sewage sludge incineration	Multiple hearth furnace	50100504	0.0038 lb/ton dry sludge	Average of six tests, scrubber	101
Trichloroethylene	79016	4953	Wastewater treatment	POTW	50100701	1240 lb/ton trichloroethylene in influe	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	99
Trichloroethylene	79016	5169	Chemical distribution facilities	Storage and handling emissions	4	1.2 lb/ton TCE handled	Stor. tanks uncont. & loading emis. part. control., based on aggregate TCE emis. for dist. fac./1983	109
Trichloroethylene	79016	806	Hospital waste incineration	Incinerator	50200508	2.39 x 10E-6 lb/ton feed	Uncontrolled, test data	147

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Trichlorofluoroethane	75694		Scrap tire, open burning	Tires in experimental burn hut		0.066 lb/ton tire	VOST samples burn rate - 3.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Trichlorofluoroethane	75694		Scrap tire, open burning	Tires in experimental burn hut		0.46 lb/ton tire	VOST samples burn rate - 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Trichlorofluoroethane	75694		Scrap tire, open burning	Tires in experimental burn hut		0.617 lb/ton tire	VOST samples burn rate - 6.63 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
2,4,6-Trichlorophenol	88062	4953	Sewage sludge incineration	Fluidized-bed furnace	50100504	(1.14 x 10E-4 lb/ton sludge	One test, scrubber	101
2,4,6-Trichlorophenol	88062	4953	Sewage sludge incineration	Multiple hearth furnace	50100504	(7 x 10E-5 lb/ton dry sludge	One test, scrubber	101
1,1,1-Trichloropropane	77789891	2869	Epichlorohydrin production by hydrochlorination	Separation unit	301309	1 lb/ton produced	Control unclear, based on mass balance and testing	95
1,1,1-Trichloropropane	77789891	2869	Propylene oxide production by chlorohydrination	Absorption	30120502	0.81 lb/ton produced	Control unclear, based on mass balance and testing	95
1,1,2-Trichloro-1,2,2-trifluoroethane	76131		Degreasing operations using trichlorotrifluoroethane	Cold cleaner	40100	1740 lb/ton fresh (virgin) solvent used	Uncontrolled, considers recycle, based on material balance	102
1,1,2-Trichloro-1,2,2-trifluoroethane	76131		Degreasing operations using trichlorotrifluoroethane	Cold cleaner	40100	1720 lb/ton fresh (virgin) solvent used	Contr = 0.7 freeboard ratio + drainage rack w/ 15 sec. drain time, considers recycle, mater. balance	102
1,1,2-Trichloro-1,2,2-trifluoroethane	76131		Degreasing operations using trichlorotrifluoroethane	Conveyorized vapor degreaser	40100298	1920 lb/ton fresh (virgin) solvent used	Uncontrolled, considers recycle, based on material balance	76
1,1,2-Trichloro-1,2,2-trifluoroethane	76131		Degreasing operations using trichlorotrifluoroethane	Conveyorized vapor degreaser	40100298	1820 lb/ton fresh (virgin) solvent used	Controlled by carbon adsorber or refrig. freeboard chiller, considers recycle, material balance	76
1,1,2-Trichloro-1,2,2-trifluoroethane	76131		Degreasing operations using trichlorotrifluoroethane	Open top vapor degreasers	40100207	1860 lb/ton fresh (virgin) solvent used	Uncontrolled, considers recycle, based on material balance	76
1,1,2-Trichloro-1,2,2-trifluoroethane	76131		Degreasing operations using trichlorotrifluoroethane	Open top vapor degreasers	40100207	1780 lb/ton fresh (virgin) solvent used	Controlled by refrig. freeboard chiller, considers recycle, based on material balance	76
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	7216	Dry cleaning, trichlorotrifluoroethane	Cartridge filter disposal	40100106	20 lb/ton clothes cleaned	Based on tests and literature	97
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	7216	Dry cleaning, trichlorotrifluoroethane	Fugitive emissions	40100106	20 - 60 lb/ton clothes cleaned	Based on tests and literature	97

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	7216	Dry cleaning, trichlorotrifluoroethane	Still residue disposal	40100106	10 lb/ton clothes cleaned	Based on tests and literature	97
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	7216	Dry cleaning, trichlorotrifluoroethane	Washer/dryer/still	40100106	0 lbton clothes cleaned	Based on typical refrigeration system at CFC drycleaning plant	97
1,1,2-Trichloro-1,2,2-trifluoroethane	76131	806	Hospital waste incineration	Incinerator	50200505	8.25 x 10E-4 lb/ton feed	Uncontrolled, test data	167
Trimethylbenzene (mixed isomers)	25551137		Scrap tire, open burning	Tires in experimental burn hut		0.862 lb/ton tire	XAD-2 extracts w/MS anal.,shred condition =2" by 2"pieces, burn rate = 1.3 kg/hr, uncontrolled, avg of 2 value,, range is 0.624 - 1.10lb/ton	212
Trimethylbenzene (mixed isomers)	25551137		Scrap tire, open burning	Tires in experimental burn hut		0.651 lb/ton tire	XAD-2 extracts w/MS anal.,shred condition =2" by 2"pieces, burn rate =1.1 kg/hr, uncontrolled,avg.of 2 values, range is 0.580 - 0.723 lb/ton	212
Trimethylbenzene (mixed isomers)	25551137		Scrap tire, open burning	Tires in experimental burn hut		0.615 lb/ton tire	XAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 1.7 kg/hr, uncontrolled	212
Trimethylbenzene (mixed isomers)	25551137		Scrap tire, open burning	Tires in experimental burn hut		0.225 lb/ton tire	XAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 2.3 kg/hr, uncontrolled	212
Trimethylbenzene (mixed isomers)	25551137		Scrap tire, open burning	Tires in experimental burn hut		0.102 lb/ton tire	VOST samples burn rate - 1.5 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Trimethylbenzene (mixed isomers)	25551137		Scrap tire, open burning	Tires in experimental burn hut		0.059 lb/ton tire	VOST samples burn rate - 2.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Trimethylbenzene (mixed isomers)	25551137		Scrap tire, open burning	Tires in experimental burn hut		0.202 lb/ton tire	VOST samples burn rate - 0.9 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Trimethylbenzene (mixed isomers)	25551137		Scrap tire, open burning	Tires in experimental burn hut		0.127 lb/ton tire	VOST samples burn rate - 1.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Trimethylbenzene (mixed isomers)	25551137		Scrap tire, open burning	Tires in experimental burn hut		49.09 lb/ton tire	VOST samples burn rate - 1.4 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Trimethylbenzene (mixed isomers)	25551137		Scrap tire, open burning	Tires in experimental burn hut		0.315 lb/ton tire	VOST samples burn rate - 0.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Trimethylbenzene (mixed isomers)	25551137		Scrap tire, open burning	Tires in experimental burn hut		0.388 lb/ton tire	VOST samples burn rate - 0.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Trimethylbenzene (mixed isomers)	25551137		Scrap tire, open burning	Tires in experimental burn hut		0.61 lb/ton tire	VOST samples burn rate - 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Trimethylbenzene (mixed isomers)	25551137		Scrap tire, open burning	Tires in experimental burn hut		0.61 lb/ton tire	VOST samples burn rate - 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Trimethylbenzene (mixed isomers)	25551137		Scrap tire, open burning	Tires in experimental burn hut		0.134 lb/ton tire	VOST samples burn rate - 2.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Trimethylbenzene (mixed isomers)	25551137		Scrap tire, open burning	Tires in experimental burn hut		0.0074 lb/ton tire	VOST samples burn rate = 6.63 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Vanadium	7440622		Coal combustion, commercial	Stoker boilers	103	134.7 lb/10E12 Btu	Uncontrolled, based on reported emissions and engineering judgement	94
Vanadium	7440622		Coal combustion, industrial	Pulverized boiler	102	76.52 lb/10E12 Btu	Controlled by multicyclones, based on reported emissions and engineering judgement	94
Vanadium	7440622		Coal combustion, industrial	Pulverized boiler	102	95.65 lb/10E12 Btu	Controlled by scrubber, based on reported emissions and engineering judgement	94
Vanadium	7440622		Coal combustion, industrial	Stoker boilers	102	57.74 lb/10E12 Btu	Controlled by multicyclones, based on reported emissions and engineering judgement	94
Vanadium	7440622		Coal combustion, industrial	Stoker boilers	102	134.7 lb/10E12 Btu	Uncontrolled, based on reported emissions and engineering judgement	94
Vanadium	7440622		Coal combustion, residential	Anthracite coal-fired boilers		153.5 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	94
Vanadium	7440622		Coal combustion, residential	Bituminous coal-fired boilers		144.5 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	94
Vanadium	7440622		Coal combustion, residential	Lignite coal-fired boilers		79.77 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	94
Vanadium	7440622		Oil combustion, commercial	Distillate oil-fired tangential furnaces	103005	69.5 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	94
Vanadium	7440622		Oil combustion, commercial	Distillate oil-fired wall furnaces	103005	69.5 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	94
Vanadium	7440622		Oil combustion, commercial	Residual oil-fired tangential furnaces	103004	8487 lb/10E12 Btu	Uncontrolled, based on reported emissions and engineering judgement	94
Vanadium	7440622		Oil combustion, commercial	Residual oil-fired wall furnaces	103004	8487 lb/10E12 Btu	Uncontrolled, based on reported emissions and engineering judgement	94
Vanadium	7440622		Oil combustion, industrial	Tangential furnace	102	402.9 lb/10E12 Btu	Controlled by scrubber, based on reported emissions and engineering judgement	94
Vanadium	7440622		Oil combustion, industrial	Tangential furnace	102	3014 lb/10E12 Btu	Uncontrolled, based on reported emissions and engineering judgement	94
Vanadium	7440622		Oil combustion, industrial	Wall furnace	102	402.9 lb/10E12 Btu	Controlled by scrubber, based on reported emissions and engineering judgement	94
Vanadium	7440622		Oil combustion, industrial	Wall furnace	102	3014 lb/10E12 Btu	Uncontrolled, based on reported emissions and engineering judgement	94

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Vanadium	7440622		Oil combustion, residential	Distillate oil-fired boiler, util/commerc/industr/residential		23.42 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	54
Vanadium	7440622		Wood combustion, residential	Woodstove without baffle		3 x 10E-5 lb/ton wood	Uncontrolled, based on one study, nonbaffled stove burning green pine	58
Vanadium	7440622	1094	Vanadium mining and processing	Entire process	303024	25 lb/ton vanadium processed	Based on industry estimates (late 1960s/early 1970s), control status unspecified	56
Vanadium	7440622	226	Woven fabric finishing	Heat setting	330001	4.2 x 10E-6 lb/ton fabric	Uncontrolled, based on test data	52
Vanadium	7440622	2819	Catalyst manufacture	Entire process	301	20 lb/ton of vanadium processed	Control status unspecified, based on information obtained from industrial sources	56
Vanadium	7440622	2951	Asphaltic concrete production	Plant stack	305002	1.87 x 10E-9 lb/ton concrete	Controlled (unspecified) from a single plant, avg. of 2 values, range is 1.76 x 10E-9 - 1.98 x 10E-9	170
Vanadium	7440622	2951	Asphaltic concrete production	Plant stack	305002	<3.9 x 10E-9 lb/ton concrete	Uncontrolled from a single plant, avg. of 2 values, range is 1.98 x 10E-9 - 5.7 x 10E-9	170
Vanadium	7440622	2951	Asphaltic concrete production	Plant stack	305002	0.00E-7 g/ton concrete	Controlled (unspecified) from a single plant	170
Vanadium	7440622	33	Nonferrous alloy production	Entire process	3	12 lb/ton of vanadium processed	Control status unspecified, based on information obtained from two industrial sources	56
Vanadium	7440622	3312	Iron and steel production	Blast furnace	303008	1.4 x10E-3 lb/ton pig iron produced	Control status/basis unclear	56
Vanadium	7440622	3312	Steel production	Basic oxygen furnace	303009	0.0003 lb/ton steel produced	97% emission control, based on particulate emission factor and V content	56
Vanadium	7440622	3312	Steel production	Electric arc furnace	30300904	0.008 lb/ton of steel produced	78% emission control, based on particulate emission factor and V content	56
Vanadium	7440622	3312	Steel production	Open hearth furnace	30300901	0.0051 lb/ton steel produced	40% control efficiency, based on particulate emission factor and V content	56
Vanadium	7440622	3313	Ferrovanadium production	Electric furnace	303	49 lb/ton vanadium processed	Uncontrolled, based on industry estimate (late 1960s/early 1970s)	56
Vanadium	7440622	3313	Ferrovanadium production	Materials handling	303	12 lb/ton vanadium processed	Control status/basis unspecified	56
Vanadium	7440622	4911	Coal combustion, utility	Anthracite coal-fired pulverized boilers	10100101	92.29 lb/10E12 Btu	Controlled by ESP, based on reported emissions data and engineering judgement	54
Vanadium	7440622	4911	Coal combustion, utility	Anthracite coal-fired stoker boilers	10100102	57.74 lb/10E12 Btu	Controlled by multicyclones, based on reported emissions data and engineering judgement	54

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Vanadium	7440622	4911	Coal combustion, utility	Bituminous coal-fired cyclone boilers	10100203	69.80 lb/10E12 Btu	Controlled by ESP, based on reported emissions data and engineering judgement	94
Vanadium	7440622	4911	Coal combustion, utility	Bituminous coal-fired cyclone boilers	10100203	69.5 lb/10E12 Btu	Controlled by scrubber, based on reported emissions data and engineering judgement	94
Vanadium	7440622	4911	Coal combustion, utility	Bituminous coal-fired pulverized dry bottom boilers	10100202	91.3 lb/10E12 Btu	Controlled by ESP, based on reported emissions data and engineering judgement	94
Vanadium	7440622	4911	Coal combustion, utility	Bituminous coal-fired pulverized dry bottom boilers	10100202	145.6 lb/10E12 Btu	Controlled by scrubber, based on reported emissions data and engineering judgement	94
Vanadium	7440622	4911	Coal combustion, utility	Bituminous coal-fired pulverized dry bottom boilers	10100202	255.0 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	94
Vanadium	7440622	4911	Coal combustion, utility	Bituminous coal-fired pulverized wet bottom boilers	10100201	74.90 lb/10E12 Btu	Controlled by ESP, based on reported emissions data and engineering judgement	94
Vanadium	7440622	4911	Coal combustion, utility	Bituminous coal-fired stoker boilers	101002	97.74 lb/10E12 Btu	Controlled by multicyclones, based on reported emissions data and engineering judgement	94
Vanadium	7440622	4911	Coal combustion, utility	Lignite coal-fired cyclone boilers	10100303	540.3 lb/10E12 Btu	Controlled by ESP, based on reported emissions data and engineering judgement	94
Vanadium	7440622	4911	Coal combustion, utility	Lignite coal-fired cyclone boilers	10100303	674.8 lb/10E12 Btu	Controlled by multicyclones, based on reported emissions data and engineering judgement	94
Vanadium	7440622	4911	Coal combustion, utility	Lignite coal-fired pulverized dry bottom boilers	10100301	40.58 lb/10E12 Btu	Controlled by ESP, based on reported emissions data and engineering judgement	94
Vanadium	7440622	4911	Coal combustion, utility	Lignite coal-fired pulverized wet bottom boilers	10100301	32.92 lb/10E12 Btu	Controlled by ESP, based on reported emissions data and engineering judgement	94
Vanadium	7440622	4911	Coal combustion, utility	Lignite coal-fired stoker boilers	101003	97.74 lb/10E12 Btu	Controlled by multicyclones, based on reported emissions data and engineering judgement	94
Vanadium	7440622	4911	Oil combustion, utility	Residual oil-fired tangential furnaces	101004	702.6 lb/10E12 Btu	Controlled by ESP, based on reported emissions and engineering judgement	94
Vanadium	7440622	4911	Oil combustion, utility	Residual oil-fired tangential furnaces	101004	3819 lb/10E12 Btu	Uncontrolled, based on reported emissions and engineering judgement	94
Vanadium	7440622	4911	Oil combustion, utility	Residual oil-fired wall furnaces	101004	702.6 lb/10E12 Btu	Controlled by ESP, based on reported emissions and engineering judgement	94

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Vanadium	7440622	4911	Oil combustion, utility	Residual oil-fired wall furnaces	101004	3515 lb/10E12 Btu	Uncontrolled, based on reported emissions and engineering judgement	54
Vanadium oxide	1314621	2865	Phthalic anhydride production - naphthalene process	Catalyst storage	301019	0.82 lb catalyst/ton PA produced	Uncontrolled, emissions are the catalyst, not pure vanadium oxide	120
Vanadium oxide	1314621	2865	Phthalic anhydride production - naphthalene process	Catalyst storage	301019	0.02 lb catalyst/ton PA produced	Controlled, emissions are the catalyst, not pure vanadium oxide	120
Vanadium oxide	1314621	3312	Steel production	AOD vessel - melt and refine cycle	303009	0.016 lbs/ton specialty steel	Uncontrolled emissions	190
Vinyl acetate	108054	286	Vinyl acetate production	Fugitive emission - flanges	30116780	0.00094 lb/hr	Uncontrolled emission factor	214
Vinyl acetate	108054	286	Vinyl acetate production	Fugitive emission - sampling connections	30116780	0.033 lb/hr	Uncontrolled emission factor	214
Vinyl acetate	108054	286	Vinyl acetate production	Fugitive emission - compressors	30116780	0.0330 lb/hr	Uncontrolled emission factor	214
Vinyl acetate	108054	286	Vinyl acetate production	Fugitive emission - open-ended lines	30116780	0.0041 lb/hr	Uncontrolled emission factor	214
Vinyl acetate	108054	286	Vinyl acetate production	Fugitive emission - gas pressure relief devices	30116780	0.229 lb/hr	Uncontrolled emission factor	214
Vinyl acetate	108054	286	Vinyl acetate production	Fugitive emission - valves	30116780	0.00050 lb/hr	Uncontrolled emission factor for a heavy liquid	214
Vinyl acetate	108054	286	Vinyl acetate production	Fugitive emission - valves	30116780	0.00090 lb/hr	Uncontrolled emission factor for a light liquid	214
Vinyl acetate	108054	286	Vinyl acetate production	Fugitive emission - valves	30116780	0.003 lb/hr	Uncontrolled emission factor for a gas	214
Vinyl acetate	108054	286	Vinyl acetate production	Fugitive emission - pump seals	30116780	0.029 lb/hr	Uncontrolled emission factor for a heavy liquid	214
Vinyl acetate	108054	286	Vinyl acetate production	Fugitive emission - pump seals	30116780	0.0044 lb/hr	Uncontrolled emission factor for a light liquid	214
Vinyl chloride	75014	2821	Polyvinyl chloride production	Bulk polymerization process	30101801	48.4 lb/ton PVC	Based on a model plant, 1978 data, 1.5 x 10E8 lb capacity, control status not certain	130
Vinyl chloride	75014	2821	Polyvinyl chloride production	Bulk polymerization process, area emissions - silo, bagger, loading	30101801	4.4 lb VC monomer/ton PVC prod.	Industry average, control level of existing plants unknown, variable	24

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Vinyl chloride	75014	2821	Polyvinyl chloride production	Bulk polymerization process, fugitives	30101801	9.6 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Vinyl chloride	75014	2821	Polyvinyl chloride production	Bulk polymerization process, monomer recovery vent	30101801	30 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Vinyl chloride	75014	2821	Polyvinyl chloride production	Bulk polymerization process, process water	30101801	0.22 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Vinyl chloride	75014	2821	Polyvinyl chloride production	Bulk polymerization process, reactor opening loss	30101801	1.6 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Vinyl chloride	75014	2821	Polyvinyl chloride production	Bulk polymerization process, reactor safety valve vents	30101801	2 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Vinyl chloride	75014	2821	Polyvinyl chloride production	Centrifuge vents	301018	2.6 lb/ton PVC	Engineering Judgement	138
Vinyl chloride	75014	2821	Polyvinyl chloride production	Combined sources after resin stripping	301018	25 lb/ton PVC product	Rough estimate for uncontrolled emissions	27
Vinyl chloride	75014	2821	Polyvinyl chloride production	Combined sources after resin stripping	301018	0.4 lb/ton PVC product	Rough estimate for actual emissions, control level at 23 existing plants unknown	27
Vinyl chloride	75014	2821	Polyvinyl chloride production	Dispersion process, area emissions - dryer, silo, bagger, loading	301018	48.2 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Vinyl chloride	75014	2821	Polyvinyl chloride production	Dispersion process, fugitives	301018	32.4 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Vinyl chloride	75014	2821	Polyvinyl chloride production	Dispersion process, monomer recovery vent	301018	10 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Vinyl chloride	75014	2821	Polyvinyl chloride production	Dispersion process, process water	301018	0.5 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Vinyl chloride	75014	2821	Polyvinyl chloride production	Dispersion process, reactor opening loss	301018	3.0 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Vinyl chloride	75014	2821	Polyvinyl chloride production	Dispersion process, reactor safety valve vents	301018	4.4 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Vinyl chloride	75014	2821	Polyvinyl chloride production	Dispersion process, slurry blend tank	301018	6.8 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Vinyl chloride	75014	2821	Polyvinyl chloride production	Dispersion process, stripper loss	301018	24.6 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Vinyl chloride	75014	2821	Polyvinyl chloride production	Dryer discharge	301018	2.8 lb/ton PVC	Engineering judgement	138
Vinyl chloride	75014	2821	Polyvinyl chloride production	Emulsion polymerization process	30101801	120.2 lb/ton PVC	Based on a model plant, 1978 data, 1.5 x 10E8 lb capacity, control status not certain	138
Vinyl chloride	75014	2821	Polyvinyl chloride production	Fugitive emissions	301018	30.6 lb/ton PVC product	Rough estimate for uncontrolled emissions	27
Vinyl chloride	75014	2821	Polyvinyl chloride production	Fugitive emissions	301018	0.76 lb/ton PVC product	Rough estimate for actual emissions, control level at 23 existing plants unknown	27
Vinyl chloride	75014	2821	Polyvinyl chloride production	Monomer recovery condenser vent	301018	10 lb/ton PVC	Engineering judgement	138
Vinyl chloride	75014	2821	Polyvinyl chloride production	Primary control	301018	9.6 lb/ton PVC product	Rough estimate of uncontrolled emissions	27
Vinyl chloride	75014	2821	Polyvinyl chloride production	Primary control	301018	0.02 lb/ton PVC product	Rough estimate of actual emissions, control level at 23 existing plants unknown	27
Vinyl chloride	75014	2821	Polyvinyl chloride production	Reactor entry purge	301018	5.6 lb/ton PVC	Engineering judgement	138
Vinyl chloride	75014	2821	Polyvinyl chloride production	Reactor opening loss	301018	9.2 lb/ton PVC product	Rough estimate for uncontrolled emissions	27
Vinyl chloride	75014	2821	Polyvinyl chloride production	Reactor opening loss	301018	0.04 lb/ton PVC product	Rough estimate for actual emissions, control level at 23 existing plants unknown	27
Vinyl chloride	75014	2821	Polyvinyl chloride production	Reactor safety relief valve	301018	4.2 lb/ton PVC	Engineering judgement, control status not certain	138
Vinyl chloride	75014	2821	Polyvinyl chloride production	Relief valves	301018	4.0 lb/ton PVC product	Rough estimate for uncontrolled emissions	27
Vinyl chloride	75014	2821	Polyvinyl chloride production	Relief valves	301018	0.1404 lb/ton PVC product	For actual emissions, control level unknown	27
Vinyl chloride	75014	2821	Polyvinyl chloride production	Slurry blend tank vents	301018	8.8 lb/ton PVC	Engineering judgement	138
Vinyl chloride	75014	2821	Polyvinyl chloride production	Solution polymerization process	30101801	35.6 lb/ton PVC	Based on a model plant, 1978 data, 1.5 x 10E8 lb capacity, control status not certain	138
Vinyl chloride	75014	2821	Polyvinyl chloride production	Solvent polymerization process, area sources - silo/dryer/bagger/load.	30101801	16.6 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Vinyl chloride	75014	2821	Polyvinyl chloride production	Solvent polymerization process, fugitives	30101801	0.6 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Vinyl chloride	75014	2821	Polyvinyl chloride production	Solvent polymerization process, monomer recovery vent	30101801	4.2 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	24
Vinyl chloride	75014	2821	Polyvinyl chloride production	Solvent polymerization process, process water	30101801	0.04 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	24
Vinyl chloride	75014	2821	Polyvinyl chloride production	Solvent polymerization process, reactor opening loss	30101801	10 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	24
Vinyl chloride	75014	2821	Polyvinyl chloride production	Solvent polymerization process, reactor safety valve vents	30101801	1.2 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	24
Vinyl chloride	75014	2821	Polyvinyl chloride production	Solvent polymerization process, stripper loss	30101801	1.0 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	24
Vinyl chloride	75014	2821	Polyvinyl chloride production	Storage silos	301018	1.4 lb/ton PVC	Engineering judgement	138
Vinyl chloride	75014	2821	Polyvinyl chloride production	Stripper jets	301018	3.6 lb/ton PVC	Engineering judgement	138
Vinyl chloride	75014	2821	Polyvinyl chloride production	Suspension process, area emissions - dryer, silo, bagger, loading	30101801	14 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	24
Vinyl chloride	75014	2821	Polyvinyl chloride production	Suspension process, centrifuge vent	30101801	2.6 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	24
Vinyl chloride	75014	2821	Polyvinyl chloride production	Suspension process, entire plant	30101801	71 lb/ton PVC	Based on a model plant, 1978 data, 1.9 x 10E8 lb capacity, control status not certain	138
Vinyl chloride	75014	2821	Polyvinyl chloride production	Suspension process, fugitives	30101801	30 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	24
Vinyl chloride	75014	2821	Polyvinyl chloride production	Suspension process, monomer recovery	30101801	9.4 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	24
Vinyl chloride	75014	2821	Polyvinyl chloride production	Suspension process, process water	30101801	0.05 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	24
Vinyl chloride	75014	2821	Polyvinyl chloride production	Suspension process, reactor opening loss	30101801	2.8 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	24
Vinyl chloride	75014	2821	Polyvinyl chloride production	Suspension process, reactor safety valve vents	30101801	4.0 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	24
Vinyl chloride	75014	2821	Polyvinyl chloride production	Suspension process, slurry blend tank	30101801	0.4 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	24

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Vinyl chloride	75014	2821	Polyvinyl chloride production	Suspension process, stripper loss	30101801	6.4 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Vinyl chloride	75014	2869	Ethylene dichloride production - oxyhydrochlorination	Absorption	30112501	0.02 lb/ton produced	Control unclear, based on mass balance and testing	95
Vinyl chloride	75014	2869	Ethylene dichloride production - oxyhydrochlorination	Separation unit	30112501	0.024 lb/ton produced	Control unclear, based on mass balance and testing	95
Vinyl chloride	75014	2869	Ethylene dichloride/vinyl chloride production	EDC finishing column	30112544	1.0 lb VC monomer/ton VCM prod.	Industry average, control level at existing plants unknown, variable	26
Vinyl chloride	75014	2869	Ethylene dichloride/vinyl chloride production	Fugitive emissions	301125	2.4 lb/ton EDC-VC produced	Uncontrolled, rough estimate	27
Vinyl chloride	75014	2869	Ethylene dichloride/vinyl chloride production	Fugitive emissions	301125	0.064 lb/ton EDC-VC produced	Rough estimate of actual emissions, control level at 9 existing plants unknown	27
Vinyl chloride	75014	2869	Ethylene dichloride/vinyl chloride production	Fugitive emissions	301125	2.43 lb VC monomer/ton VCM produced	Industry average, control level at existing plants unknown, variable	26
Vinyl chloride	75014	2869	Ethylene dichloride/vinyl chloride production	Oxychlorination process	30112501	0.728 lb VC monomer/ton VCM prod.	Industry average, control level at existing plants unknown, variable	26
Vinyl chloride	75014	2869	Ethylene dichloride/vinyl chloride production	Oxychlorination vent	30112501	0.72 lb/ton EDC-VC product	Uncontrolled, rough estimate	27
Vinyl chloride	75014	2869	Ethylene dichloride/vinyl chloride production	Oxychlorination vent	30112501	0.198 lb/ton EDC-VC produced	Rough estimate, actual emissions, control level at 9 existing plants unknown	27
Vinyl chloride	75014	2869	Ethylene dichloride/vinyl chloride production	Primary control	301125	9.8 lb/ton EDC-VC product	Uncontrolled, rough estimate	27
Vinyl chloride	75014	2869	Ethylene dichloride/vinyl chloride production	Primary control	301125	0.02 lb/ton EDC-VC product	Rough estimate, actual emissions, degree of control at 9 existing plants unknown	27
Vinyl chloride	75014	2869	Ethylene dichloride/vinyl chloride production	Process water	301125	0.0014 lb VC monomer/ton VCM prod.	Industry average, control level at existing plants unknown, variable	26
Vinyl chloride	75014	2869	Ethylene dichloride/vinyl chloride production	Relief valves	301125	0.0124 lb/ton EDC-VC product	Control unknown for actual emissions	27
Vinyl chloride	75014	2869	Ethylene dichloride/vinyl chloride production	VCM finishing column	30112545	4.8 lb VC monomer/ton VCM prod.	Industry average, control level at existing plants unknown, variable	26
Vinyl chloride	75014	2869	Methyl chloroform production by hydrochlorination	Separation unit	30112525	1 lb/ton produced	Control uncertain, based on mass balance and tests	98

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Vinyl chloride	75014	2869	Methyl chloroform production from vinyl chloride	Distillation vent	30112528	0.014 lb/ton methyl chloroform produced	Uncontrolled, based on hypothetical plant with 3 x 10E8 lb/yr production capacity	70
Vinyl chloride	75014	2869	Methyl chloroform production from vinyl chloride	Distillation vent	30112528	0.0002 lb/ton methyl chloroform produced	Controlled by incinerator, based on hypothetical plant with 3 x 10E8 lb/yr production capacity	70
Vinyl chloride	75014	2869	Perchloroethylene and trichloroethylene production	Oxychlorination process, drying column vent	301125	1.04 lb/ton of PCE and TCE produced	Uncontrolled, based on data from one producer	70
Vinyl chloride	75014	4953	Sewage sludge incineration	Fluidized-bed furnace	50100504	<2 x 10E-5 lb/ton dry sludge	One test, scrubber	101
Vinyl chloride	75014	4953	Sewage sludge incineration	Multiple hearth furnace	50100504	0.0082 lb/ton dry sludge	Average of four tests, scrubber	101
Vinyl chloride	75014	4953	Wastewater treatment	POTW	50100701	1420 lb/ton vinyl chloride in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
Vinylidene chloride	75354	2821	Polyvinyl chloride production	Suspension process, entire plant	30101801	1.8 x 10E-4 lb/ton PVC	Based on a model plant, 1978 data, 1.5 x 10E8 lb capacity, control status not certain	138
Vinylidene chloride	75354	2824	Vinylidene chloride copolymer fabric, (cellophane coating)	Inc. poly. stor. vents, poly. mix. & blend. vents, & finsh. poly. dry.	301125	0.02 - 0.24 lb/ton copolymer produced	Based on counts of pumps, valves, and compressors and the average VOC wt. fraction in the streams	165
Vinylidene chloride	75354	2824	Vinylidene chloride copolymer fabric, (for extrusion)	Inc. poly. stor. vents, poly. mix. & blend. vents, & finsh. poly. dry.	301125	0.004-0.05 lb/ton copolymer produced	Based on counts of pumps, valves, and compressors and the average VOC wt. fraction in the streams	165
Vinylidene chloride	75354	2824	Vinylidene chloride copolymer fabric, (for latex coating)	Inc. poly. stor. vents, poly. mix. & blend. vents, & finsh. poly. dry.	301125	0.1 - 3 lb/ton copolymer produced	Based on counts of pumps, valves, and compressors and the average VOC wt. fraction in the streams	165
Vinylidene chloride	75354	2824	Vinylidene chloride polymerization	Monomer recovery	301125	0.66 lb/ton polymer produced	Controlled	165
Vinylidene chloride	75354	2824	Vinylidene chloride polymerization	Process fugitive emissions	301125	5.6-22 lb/ton polymer produced	Controlled	165
Vinylidene chloride	75354	2824	Vinylidene chloride polymerization	Reactor	301125	7.0 lb/ton polymer produced	Controlled	165
Vinylidene chloride	75354	2824	Vinylidene chloride polymerization	Unloading/storage	301125	4.2 lb/ton polymer produced	Controlled	165

EMISSION FACTORS

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Vinylidene chloride	75354	2824	Wastewater treatment	Wastewater emissions	301125	1960 lb/ton VDC in wastewater feed	Based on 98% evaporation rate	145
Vinylidene chloride	75354	2869	CCl4 and perchloroethylene production - propane chlorination	Hydrocarbon chlorinolysis process, hex waste handling	301125	0.026 lb/ton PCE & carbon tet. produced	Uncontrolled, based on hypothetical plant producing 1.1 x 10E8 lb/yr PCE and 4.4 x 10E7 lb/yr CT	70
Vinylidene chloride	75354	2869	CCl4 and perchloroethylene production - propane chlorination	Hydrocarbon chlorinolysis process, hex waste handling	301125	0.00026 lb/ton PCE & carbon tet. produce	Vapor-bal.syst./carb.adsor.(99% eff), hypothet. plant prod. 1.1x10E8 lb/yr PCE & 4.4x10E7 lb/yr CCl4	70
Vinylidene chloride	75354	2869	Ethylene dichloride production - oxyhydrochlorination	Separation unit	30112501	0.00018 lb/ton produced	Control unclear, based on mass balance and testing	95
Vinylidene chloride	75354	2869	Perchloroethylene and trichloroethylene production	Chlorination process, distillation vents	30112531	0.212 lb/ton PCE and TCE produced	Uncontrolled	145
Vinylidene chloride	75354	2869	Perchloroethylene and trichloroethylene production	Chlorination process, distillation vents	30112531	0.042 lb/ton PCE and TCE produced	Refrigerated condenser (80%)	145
Vinylidene chloride	75354	2869	Perchloroethylene and trichloroethylene production	Chlorination process, neutralization and drying vent	30112532	9.0 lb/ton PCE and TCE produced	Uncontrolled, based on published data from indiv. plants and general processing techniques	145
Vinylidene chloride	75354	2869	Perchloroethylene and trichloroethylene production	Chlorination process, neutralization and drying vent	30112532	1.0 lb/ton PCE and TCE produced	Refrigerated condenser (80%)	145
Vinylidene chloride	75354	2869	Perchloroethylene and trichloroethylene production	Oxychlorination process, distillation vent	30112521	0.196 lb/ton PCE and TCE	Uncontrolled	145
Vinylidene chloride	75354	2869	Perchloroethylene and trichloroethylene production	Oxychlorination process, distillation vent	30112521	0.04 lb/ton PCE and TCE	Aqueous scrubber	145
Vinylidene chloride	75354	2869	Perchloroethylene and trichloroethylene production	Oxychlorination process, drying colum vent	301125	0.8 lb/ton PCE and TCE	Uncontrolled	145
Vinylidene chloride	75354	2869	Perchloroethylene and trichloroethylene production	Oxychlorination process, drying colum vent	301125	<0.016 lb/ton PCE and TCE	Thermal oxidation	145
Vinylidene chloride	75354	2869	Perchloroethylene and trichloroethylene production	Oxychlorination process, reactor vent	301125	7.4 lb/ton PCE and TCE produced	Uncontrolled	145

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Vinylidene chloride	75354	2869	Perchloroethylene and trichloroethylene production	Oxychlorination process, reactor vent	301125	<0.152 lb/ton PCE and TCE produced	Thermal oxidation	165
Vinylidene chloride	75354	2869	Vinylidene chloride production	Distillation vent	30112553	1.4 lb/ton VDC produced	Uncontrolled	165
Vinylidene chloride	75354	2869	Vinylidene chloride production	Distillation vent	30112553	0.14 lb/ton VDC produced	Controlled, aqueous scrubber or refrigerated condenser (90% reduction)	165
Vinylidene chloride	75354	2869	Vinylidene chloride production	Process fugitive emissions	30112555	2.12 lb/hr	Uncontrolled (independent of plant capacity)	165
Vinylidene chloride	75354	2869	Vinylidene chloride production	Process fugitive emissions	30112555	1.68 lb/hr	Quarterly inspection and maintenance (21%)	165
Vinylidene chloride	75354	2869	Vinylidene chloride production	Process fugitive emissions	30112555	1.54 lb/hr	Monthly inspection and maintenance (29%)	165
Vinylidene chloride	75354	2869	Vinylidene chloride production	Process fugitive emissions	30112555	0.26 lb/hr	Monthly inspection & maintenance, double seals on pumps & rupture disks on relief valves, 88% reduc.	165
Vinylidene chloride	75354	2869	Vinylidene chloride production	Reactor vent	30112552	12.4 lb/ton VDC produced	Uncontrolled, emis. fac. based on published data from indiv. plants& general processing techniques	165
Vinylidene chloride	75354	2869	Vinylidene chloride production	Reactor vent	30112552	<0.24 lb/ton VDC produced	Controlled (incinerator), 98+% reduction	165
Vinylidene chloride	75354	2869	Vinylidene chloride production	Storage and handling emissions	301125	0.112 lb/ton VDC produced	Controlled, unknown (typical controls are pressurized tank, refrigerated condenser)	165
Vinylidene chloride	75354	4953	Sewage sludge incineration	Multiple hearth furnace	50100506	5 x 10E-4 lb/ton dry sludge	One test, scrubber	101
Volatile organic compound		28	Industrial wastewater treatment	Treatment tank	301	[(ln(H)x0.0008558)+0.0137 4] x mas of pol. in wastestream	Uncontrolled emissions, H=Henry's Law Constant in atm=m3/mol of topic volatile organic	205
Volatile organic compound		28	Industrial wastewater treatment	Clarifier	301	[(ln(H)x0.002351)+0.3759] x mas of pol. in wastestream	Uncontrolled emissions, H=Henry's Law Constant in atm=m3/mol of topic volatile organic	205
Volatile organic compound		28	Industrial wastewater treatment	Non-aerated equalization basin	301	[(ln(H)x0.0331)+0.5752] x mas of pol. in wastestream	Uncontrolled emissions, H=Henry's Law Constant in atm=m3/mol of topic volatile organic	205
Volatile organic compound		28	Industrial wastewater treatment	Aerated equalization basin	301	[(ln(H)x0.6927)+1.345] x mas of pol. in wastestream	Uncontrolled emissions, H=Henry's Law Constant in atm=m3/mol of topic volatile organic	205
Volatile organic compound		28	Industrial wastewater treatment	Oil-water separator	301	(H x 0.8797)+21.4034 x mas of pol. in wastestream	Uncontrolled emissions, H=Henry's Law Constant in atm=m3/mol of topic volatile organic	205

FOLDPRINT

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Volatile organic compound		28	Industrial wastewater treatment	Lift station	301	[(H x 0.4421)+6.0118] x mas of pol. in wastestrean	Uncontrolled emissions, H=Henry's Law Constant in ate=m3/mol of toxic volatile organic	205
Volatile organic compound		28	Industrial wastewater treatment	Trench	301	[(ln(H)x 0.005004)+0.06595] x mas of pol. in wastestrean	Uncontrolled emissions, H=Henry's Law Constant in ate=m3/mol of toxic volatile organic	205
Volatile organic compound		28	Industrial wastewater treatment	Sump	301	[(ln(H)x 0.0004385)+0.007384] x mas of pol. in wastestrean	Uncontrolled emissions, H=Henry's Law Constant in ate=m3/mol of toxic volatile organic	205
Volatile organic compound		28	Industrial wastewater treatment	Junction box	301	[(Hx 0.592)+1.458] x mas of pol. in wastestrean	Uncontrolled emissions, H=Henry's Law Constant in ate=m3/mol of toxic volatile organic	205
Volatile organic compound		28	Industrial wastewater treatment	Manhole	301	[(Hx 1.04)+0.0003814] x mas of pol. in wastestrean	Uncontrolled emissions, H=Henry's Law Constant in ate=m3/mol of toxic volatile organic	205
Volatile organic compound		28	Industrial wastewater treatment	Drain	301	[(Hx3.973)+0.0100] x mas pol. in wastestrean	Uncontrolled emissions, H=Henry's Law Constant in ate=m3/mol of toxic volatile organic	205
1,3-Xylene	108383		Gasoline use	Automobile emissions		3.11 x 10E-6 lb/vehicle mile traveled	Engineering estimate, based on AP-42 VOC emission factor	13
1,3-Xylene	108383		Gasoline use	Automobile emissions		9.17 x 10E-5 lb/vehicle mile traveled	Engineering estimate, based on AP-42 VOC emission factor	13
1,4-Xylene	106423		Gasoline use	Automobile emissions		1.28 x 10E-6 lb/vehicle mile traveled	Engineering estimate, based on AP-42 VOC emission factor	13
1,4-Xylene	106423		Gasoline use	Automobile emissions		7.04 x 10E-5 lb/vehicle mile traveled	Engineering estimate, based on AP-42 VOC emission factor	13
1,2-Xylene	95476		Gasoline use	Automobile emissions		1.28 x 10E-6 lb/vehicle mile traveled	Engineering estimate, based on AP-42 VOC emission factor	13
1,2-Xylene	95476		Gasoline use	Automobile emissions		7.76 x 10E-5 lb/vehicle mile traveled	Engineering estimate, based on AP-42 VOC emission factor	13
1,2-Xylene	95476	2865	Phthalic anhydride production	Fugitive emissions	301019	0.08 lb/ton xylene used	Estimated	13
1,2-Xylene	95476	2865	Phthalic anhydride production	Process - general	30101901	0.28 lb/ton xylene used	Estimated	13
1,2-Xylene	95476	2865	Phthalic anhydride production	Storage	407	0.04 lb/ton xylene used	Estimated	13
1,3-Xylene	108383	2869	Isophthalic acid production	Fugitive emissions	301	0.2 lb/ton xylene used	Estimated	13

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
1,3-Xylene	108383	2869	Isophthalic acid production	Process - general	301	1.7 lb/ton xylene used	Estimated	13
1,3-Xylene	108383	2869	Isophthalic acid production	Storage	301	0.1 lb/ton xylene used	Estimated	13
1,4-Xylene	106423	2869	Terephthalic acid (crude) prod. by air oxidation process	Reactor vent	30103102	12 lb/ton crude terephthalic acid prod.	Uncontrolled, based on hypothetical plant operating 8760 h/yr and having 5.07 x 10E8 lb/yr capacity	62
1,4-Xylene	106423	2869	Terephthalic acid (crude) prod. by air oxidation process	Reactor vent	30103102	0.36 lb/ton crude terephthalic acid prod	Contr = carb. adsorb. (97% emis. reduction), hypothetical plant oper. 8760 h/yr & 5.07 x 10E8 lb/yr	62
1,4-Xylene	106423	2869	Terephthalic acid (crude) prod. by air oxidation process	Xylene, p- storage tank vents	40703622	0.22 lb/ton crude terephthalic acid prod	Uncontrolled, filling emis. only, hypothetical plant operating 8760 h/yr with 5.07 x 10E8 lb/yr cap	62
1,4-Xylene	106423	2869	Terephthalic acid production	Fugitive emissions	301031	0.14 lb/ton xylene used	Based on site visit data	13
1,4-Xylene	106423	2869	Terephthalic acid production	Process - general	301031	5.08 lb/ton xylene used	Based on site visit data	13
1,4-Xylene	106423	2869	Terephthalic acid production	Storage	407	0.22 lb/ton xylene used	Based on site visit data	13
1,3-Xylene	108383	5541	Gasoline marketing activities	Automobile refueling displacement losses	40400401	0.0171 lb/ton gasoline	Engineering estimate, based on AP-42 VOC emission factor	13
1,4-Xylene	106423	5541	Gasoline marketing activities	Automobile refueling displacement losses	40400401	0.00662 lb/ton gasoline	Engineering estimate, based on AP-42 VOC emission factor	13
1,2-Xylene	95476	5541	Gasoline marketing activities	Automobile refueling displacement losses	40400401	0.00662 lb/ton gasoline	Engineering estimate, based on AP-42 VOC emission factor	13
Xylenes (mixed isomers)	1330207		Adhesives application	End use	40200701	2000 lb/ton xylene consumed	Engineering Judgement	77
Xylenes (mixed isomers)	1330207		Automotive products use	End use		2000 lb/ton xylene consumed	Engineering Judgement	77
Xylenes (mixed isomers)	1330207		Gasoline use	Automobile emissions	200000	0.0838 lb/10E3 gal gasoline consumed	Engineering Judgement	13
Xylenes (mixed isomers)	1330207		Gasoline use	Automobile emissions	200000	3.53 lb/10E3 gal gasoline consumed	Engineering Judgement	13
Xylenes (mixed isomers)	1330207		Gasoline use	Automobile emissions		5.66 x 10E-6 lb/vehicle mile traveled	Engineering estimate, based on AP-42 VOC emission factor	13

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Xylenes (mixed isomers)	1330207		Gasoline use	Automobile emissions		2.39 x 10E-4 lb/vehicle mile traveled	Engineering estimate, based on AP-42 VOC emission factor	13
Xylenes (mixed isomers)	1330207		Paint application	Coating application of solvent-based paints	40200101	1740 lb/ton xylene used	Estimated	13
Xylenes (mixed isomers)	1330207		Scrap tire, open burning	Tires in experimental burn hut		1.668 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.3 kg/hr, uncontrolled	212
Xylenes (mixed isomers)	1330207		Scrap tire, open burning	Tires in experimental burn hut		2.052 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr, uncontrolled	212
Xylenes (mixed isomers)	1330207		Scrap tire, open burning	Tires in experimental burn hut		1.230 lb/ton tire	XAD-2 extracts w/MS analysis, chunk condition = 1/4-1/6 of tire, burn rate = 1.7 kg/hr, uncontrolled	212
Xylenes (mixed isomers)	1330207		Scrap tire, open burning	Tires in experimental burn hut		1.475 lb/ton tire	VOST samples burn rate - 1.5 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Xylenes (mixed isomers)	1330207		Scrap tire, open burning	Tires in experimental burn hut		0.962 lb/ton tire	VOST samples burn rate - 2.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Xylenes (mixed isomers)	1330207		Scrap tire, open burning	Tires in experimental burn hut		2.422 lb/ton tire	VOST samples burn rate - 0.9 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Xylenes (mixed isomers)	1330207		Scrap tire, open burning	Tires in experimental burn hut		2.130 lb/ton tire	VOST samples burn rate - 1.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Xylenes (mixed isomers)	1330207		Scrap tire, open burning	Tires in experimental burn hut		2.077 lb/ton tire	VOST samples burn rate - 1.4 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Xylenes (mixed isomers)	1330207		Scrap tire, open burning	Tires in experimental burn hut		3.932 lb/ton tire	VOST samples burn rate - 0.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Xylenes (mixed isomers)	1330207		Scrap tire, open burning	Tires in experimental burn hut		6.438 lb/ton tire	VOST samples burn rate - 0.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Xylenes (mixed isomers)	1330207		Scrap tire, open burning	Tires in experimental burn hut		0.909 lb/ton tire	VOST samples burn rate - 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Xylenes (mixed isomers)	1330207		Scrap tire, open burning	Tires in experimental burn hut		0.590 lb/ton tire	VOST samples burn rate - 3.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Xylenes (mixed isomers)	1330207		Scrap tire, open burning	Tires in experimental burn hut		0.764 lb/ton tire	VOST samples burn rate - 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Xylenes (mixed isomers)	1330207		Scrap tire, open burning	Tires in experimental burn hut		0.223 lb/ton tire	VOST samples burn rate - 2.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Xylenes (mixed isomers)	1330207		Scrap tire, open burning	Tires in experimental burn hut		0.295 lb/ton tire	VOST samples burn rate - 6.63 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Xylenes (mixed isomers)	1330207		Solvent application	Thinning solvent, xylene	40200924	2000 lb/ton xylene used	Engineering estimate, assume all xylene used is eventually released to the atmosphere	13
Xylenes (mixed isomers)	1330207	1721	Paint and coating application	End use	402	2000 lb/ton xylene consumed	Engineering Judgement	77
Xylenes (mixed isomers)	1330207	28	Paint and coating manufacture	Xylene solvent	301014	40.4 lb/ton xylene consumed		67
Xylenes (mixed isomers)	1330207	2865	Ethylbenzene production	Fugitive emissions	30114980	0.1 lb/ton xylene used	Estimated	13
Xylenes (mixed isomers)	1330207	2865	Ethylbenzene production	Process - general	30116901	0.2 lb/ton xylene used	Estimated	13
Xylenes (mixed isomers)	1330207	2865	Ethylbenzene production	Storage	407036	0.1 lb/ton xylene used	Estimated	13
Xylenes (mixed isomers)	1330207	2865	Maleic anhydride production	Fugitive emissions	301100	0.8 lb/ton product	Engineering Judgement, see EPA Source Assessment on Maleic Anhydride	67
Xylenes (mixed isomers)	1330207	2865	Maleic anhydride production	Process emissions	301100	23.2 lb/ton product	Engineering Judgement, see EPA Source Assessment on Maleic Anhydride	67
Xylenes (mixed isomers)	1330207	2865	Maleic anhydride production	Storage tank emissions	407	0.15 lb/ton product	Engineering Judgement, see EPA Source Assessment on Maleic Anhydride	67
Xylenes (mixed isomers)	1330207	2865	Phthalic anhydride production - xylene process	Storage tank emissions	407	0.004 lb/ton PA produced	Controlled, test data and engineering judgement	120
Xylenes (mixed isomers)	1330207	2865	Phthalic anhydride production - xylene process	Storage tank emissions	407036	0.40 lb/ton PA produced	Uncontrolled, based on test data and engineering judgement	120
Xylenes (mixed isomers)	1330207	2869	Diecthyl terephthalate production	Fugitive emissions	301031	0.28 lb/ton product	Based on site visit data, Hydroscience, Inc.	67
Xylenes (mixed isomers)	1330207	2869	Diecthyl terephthalate production	Process emissions	30103101	13.6 lb/ton product	Based on site visit data, Hydroscience, Inc.	67
Xylenes (mixed isomers)	1330207	2869	Diecthyl terephthalate production	Storage tank emissions	407	0.28 lb/ton product	Based on site visit data, Hydroscience, Inc.	67
Xylenes (mixed isomers)	1330207	2869	Terephthalic acid (crude) production	Reactor vent	30103102	12 lb/ton crude TPA produced	Uncontrolled	42
Xylenes (mixed isomers)	1330207	2869	Xylene (mixed) production, catalytic reformate	Fugitive emissions	30125880	0.06 lb/ton xylene produced	Based on inventory conducted by Texas Air Control Board	13
Xylenes (mixed isomers)	1330207	2869	Xylene (mixed) production, catalytic reformate	Process emissions	30125815	0.06 lb/ton xylene produced	Based on inventory conducted by Texas Air Control Board	13

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Xylenes (mixed isomers)	1330207	2869	Xylene (mixed) production, catalytic reformate	Storage tank emissions	407	0.12 lb/ton xylene produced	Based on inventory conducted by Texas Air Control Board	13
Xylenes (mixed isomers)	1330207	2869	Xylene (mixed) production, coal-derived	Fugitive emissions	30125880	0.30 lb/ton xylene produced	Based on engineering judgement, Hydroscience	13
Xylenes (mixed isomers)	1330207	2869	Xylene (mixed) production, coal-derived	Process emissions	30125815	1.0 lb/ton xylene produced	Based on engineering judgement, Hydroscience	13
Xylenes (mixed isomers)	1330207	2869	Xylene (mixed) production, coal-derived	Storage tank emissions	407	1.2 lb/ton xylene produced	Based on engineering judgement, Hydroscience	13
Xylenes (mixed isomers)	1330207	2869	Xylene (mixed) production, pyrolysis gasoline	Fugitive emissions	30125880	0.06 lb/ton xylene produced	Site visit data	13
Xylenes (mixed isomers)	1330207	2869	Xylene (mixed) production, pyrolysis gasoline	Process emissions	30125815	0.14 lb/ton xylene produced	Site visit data	13
Xylenes (mixed isomers)	1330207	2869	Xylene (mixed) production, pyrolysis gasoline	Storage tank emissions	407	0.60 lb/ton xylene produced	Site visit data	13
Xylenes (mixed isomers)	1330207	2869	Xylene (mixed) production, toluene disproportionation	Fugitive emissions	30125880	0.10 lb/ton xylene produced	Based on engineering judgement, Hydroscience	13
Xylenes (mixed isomers)	1330207	2869	Xylene (mixed) production, toluene disproportionation	Process emissions	30125815	0.10 lb/ton xylene produced	Based on engineering judgement, Hydroscience, Inc.	13
Xylenes (mixed isomers)	1330207	2869	Xylene (mixed) production, toluene disproportionation	Storage tank emissions	407	0.20 lb/ton xylene produced	Based on engineering judgement, Hydroscience, Inc.	13
Xylenes (mixed isomers)	1330207	2869	Xylene isomer production: o-xylene	Fugitive emissions	30125880	0.6 lb/ton o-xylene produced	Engineering judgement, Hydroscience	13
Xylenes (mixed isomers)	1330207	2869	Xylene isomer production: o-xylene	Process emissions	301258	3.16 lb/ton o-xylene produced	Engineering judgement, Hydroscience	13
Xylenes (mixed isomers)	1330207	2869	Xylene isomer production: o-xylene	Storage tank emissions	407	0.24 lb/ton o-xylene produced	Engineering judgement, Hydroscience	13
Xylenes (mixed isomers)	1330207	2869	Xylene isomer production: o-xylene	Fugitive emissions	30125880	0.76 lb/ton o-xylene produced	From Texas Air Control Board Emissions Survey	13
Xylenes (mixed isomers)	1330207	2869	Xylene isomer production: o-xylene	Process emissions	301258	4.18 lb/ton o-xylene produced	Based on inventory by Texas Air Control Board	13

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Xylenes (mixed isomers)	1330207	2869	Xylene isomer production, o-xylene	Storage tank emissions	407	0.16 lb/ton o-xylene produced	From Texas Air Control Board Emissions Survey	13
Xylenes (mixed isomers)	1330207	2869	Xylene isomer production, p-xylene	Fugitive emissions	30125800	0.40 lb/ton p-xylene produced	Based on inventory by Texas Air Control Board	13
Xylenes (mixed isomers)	1330207	2869	Xylene isomer production, p-xylene	Process emissions	30125810	2.20 lb/ton p-xylene produced	Based on inventory by Texas Air Control Board	13
Xylenes (mixed isomers)	1330207	2869	Xylene isomer production, p-xylene	Storage tank emissions	407	0.38 lb/ton p-xylene produced	Based on inventory by Texas Air Control Board	13
Xylenes (mixed isomers)	1330207	2911	Petroleum refinery	Entire process	3040080	6.61 lb/1000 barrels	With catalytic reforming, 50% storage and 50% fugitive + process emissions assumed	47
Xylenes (mixed isomers)	1330207	2911	Petroleum refinery	Entire process	3040080	3.3 lb/1000 barrels	Without catalytic reforming, 50% storage and 50% fugitive + process emissions assumed	47
Xylenes (mixed isomers)	1330207	2911	Petroleum refinery with cracking/reforming	Fugitive emissions	306	31.0 lb/ton total HC	Assumes fugitives are 1.5% xylene	92
Xylenes (mixed isomers)	1330207	2911	Petroleum refinery without cracking/reforming	Fugitive emissions	306	3.1 lb/ton total HC	Assumes xylene is 0.155% of THC	92
Xylenes (mixed isomers)	1330207	4581	Internal combustion engines - mobile	Jet engine exhaust	2	282 lb/ton total hydrocarbons emitted	Xylene assumed to be 14.1% of HC emissions	92
Xylenes (mixed isomers)	1330207	4953	Land treatment	Petroleum refinery sludge	50300820	2.44 lb/hectare-hr	Emissions measured within 1 hr. of sludge application to landfill	12
Xylenes (mixed isomers)	1330207	4953	Sewage sludge incineration	Multiple hearth furnace	50100504	0.00808 lb/ton dry sludge	One test, scrubber	101
Xylenes (mixed isomers)	1330207	4953	Wastewater treatment	POTW	50100701	1100 lb/ton total xylenes in influent	Based on emis. modeling for 9 POTW, represents average POTW that treats industrial wastewater	99
Xylenes (mixed isomers)	1330207	5191	Pesticide application	End use		2000 lb/ton xylene consumed	Engineering judgement	77
Xylenes (mixed isomers)	1330207	5541	Gasoline marketing activities	Automobile refueling displacement losses	40600401	0.0294 lb/ton gasoline	Engineering estimate, based on AP-42 VOC emission factor	13
Xylenes (mixed isomers)	1330207	5541	Gasoline marketing activities	Vehicle refueling, vapor loss	40600301	0.0485 lb/gal of gas pumped	For p- and o-xylene	4
Xylenes (mixed isomers)	1330207	5541	Gasoline marketing activities	Vehicle refueling, vapor loss	40600301	0.0352 lb/gal of gas pumped	Listed as emission rate for o-xylene and/or unknown C9 paraffins	4
Zinc	7440666		Waste oil combustion	Waste oil-fired boilers (<150 million Btu/h) or space heaters	1	6.34 lb/1000 gal oil burned	Uncontrolled, based on emissions data and engineering judgement, variable	99

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POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Zinc	7440666	226	Woven fabric finishing	Curing oven - resin finish	330001	1.52 x 10E-3 lb/ton fabric	Uncontrolled, average of three tests	52
Zinc	7440666	226	Woven fabric finishing	Heat setting	330001	1.48 x 10E-4 lb/ton fabric	Uncontrolled, based on test data	52
Zinc	7440666	226	Woven fabric finishing	Tenter frames - resin finishing	330001	0.00126 lb/ton fabric	Uncontrolled, average of four tests	52
Zinc	7440666	226	Woven fabric finishing	Thermosol dyeing	330001	1.98 x 10E-4 lb/ton fabric	Uncontrolled, average of three tests	52
Zinc	7440666	2951	Asphaltic concrete production	Plant stack	305002	9.9 x 10E-10 lb/ton concrete	Controlled (unspecified) from a single plant, avg. of 2 values, range is 4.4 x 10E-10 - 6.6 x 10E-10 lb/ton	170
Zinc	7440666	2951	Asphaltic concrete production	Plant stack	305002	1.98 x 10E-9 lb/ton concrete	Uncontrolled from a single plant, avg. of 2 values, range is 1.76 x 10E-9 - 2.2 x 10E-9 lb/ton	170
Zinc	7440666	33	Primary and secondary zinc oxide production	Entire process	3	40 lb/ton produced	Ranges from 20 to 170 lb In/ton product, based on industry data from 1960s	159
Zinc	7440666	3312	Steel production	Basic oxygen furnace	303009	0.3 lb/ton steel produced	Based on controlled particulate emis. factor of 14 lb/ton steel produced & zinc content of 2.24%	66
Zinc	7440666	3312	Steel production	Electric arc furnace	303009	0.7 lb/ton steel produced	Based on controlled particulate emis. factor of 2.5 lb/ton steel prod. & part. zinc content of 29.6%	66
Zinc	7440666	3312	Steel production	Open hearth furnace	303009	1.3 lb/ton steel produced	Based on controlled particulate emis. factor of 10.2 lb/ton steel produced, w/ zinc content of 12.8%	66
Zinc	7440666	3312	Steel production	Zinc galvanizing kettles	30300934	3.6 lb/ton zinc processed	Based on emissions data obtained from galvanizing plants in the late 1960s	66
Zinc	7440666	3339	Primary zinc production by electrolytic process	Entire process	303030	0.4 lb/ton production capacity	Largely controlled, based on average ratio of emissions to capacity for three plants	66
Zinc	7440666	3341	Secondary zinc smelting	Entire process	304008	20 lb/ton produced	Based on industry data from 1960s, ranges from 0.01 to 134 lb/ton	159
Zinc	7440666	3369	Die-casting production using zinc-based alloys	Entire process	304050	10 lb/ton of zinc processed	Based on information obtained from die-casting companies in 1969	66
Zinc	7440666	4953	Municipal waste combustion	Incinerator stack	501001	1.0 lb/ton munic. solid waste-dry wt.	Controlled by spray-baffle scrubber, based on material balance for model incinerator	98
Zinc	7440666	4952	Sewage sludge incineration	Fluidized-bed furnace	50100504	0.00384 lb/ton dry sludge	One test, scrubber	101
Zinc	7440666	4952	Sewage sludge incineration	Multiple hearth furnace	50100504	0.0508 lb/ton dry sludge	Average of 11 tests, scrubber	101

POLLUTANT	CAS NUMBER	SIC CODE	INDUSTRIAL PROCESS	EMISSION SOURCE	SCC CODE	EMISSION FACTOR	NOTES	REFERENCE
Zinc oxide	1314132	33	Primary zinc oxide production	Entire process	3	8 lb/ton production capacity	Controlled, based on ratio of emissions to capacity for one plant	66
Zinc oxide	1314132	3312	Steel production	Electric arc furnace - melting/refining	30300908	0 - 4.92 lbs/ton carbon steel	Uncontrolled emissions	198
Zinc oxide	1314132	3312	Steel production	Electric arc furnace - charge and tap cycle	30300908	0 - 0.326 lbs/ton carbon steel	Uncontrolled emissions	198
Zinc oxide	1314132	3312	Steel production	AOD vessel - melt and refine cycle	303009	0.544 lbs/ton specialty steel	Uncontrolled emissions	198
Zinc oxide	1314132	332	Iron foundries	Electric arc furnace - charge and tap cycle	30400304	0.28-2.8 lbs/ton of iron produced	Uncontrolled emissions	184
Zinc oxide	1314132	332	Iron foundries	Electric arc furnace - melting/refining	30400304	2.8-28 lbs/ton of iron produced	Uncontrolled emissions	184
Zinc oxide	1314132	3341	Secondary zinc smelting	Kettle sweating	30400814	0.28 lb/ton product	Based on 0.56 lb/t x 50% wt. ZnO in PM, fugitive	97

SECTION 4. EMISSION FACTORS FOR SOURCES OF TOXIC AIR POLLUTANTS

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
1,3-Butadiene production	2869	Secondary sources (wastewater, etc.)	301153	1,3-Butadiene	106990	0.936 lb/ton	Controlled (unspecific), average emission factor based on 6 facilities	144
1,3-Butadiene production	2869	Equipment leak	301153	1,3-Butadiene	106990	448 tons/yr	Average emission factor based on 9 facilities	144
1,3-Butadiene production	2869	Process vents	301153	1,3-Butadiene	106990	0.031 lb/ton	Controlled (unspecified), average emission factor based on 3 facilities	144
1,3-Butadiene production	2869	Process vents	301153	1,3-Butadiene	106990	0.465 lb/ton	Uncontrolled, average emission factor based on 3 facilities	144
1,3-Butadiene production	2869	Process vents	30115301	1,3-Butadiene	106990	43.2 lb/ton produced	Uncontrolled based on one plant's data	144
1,3-Butadiene production	2869	Equipment leak		1,3-Butadiene	106990	0.11 tons/yr	Controlled (unspecified), and uncontrolled, based on one plant's data	144
1,3-Diisocyanate production	2899	Plantwide emissions		Chloroform	67663	5.5 x 10E-4 lb/sec	Carbon adsorption	140
1,4-Butanediol production	2869	Formaldehyde storage	407	Formaldehyde	50000	0.01 - 0.4 lb/ton 37% formaldehyde used	No information was available on the basis of these estimates or the types of controls involved	104
1,4-Butanediol production	2869	Process - general	301250	Formaldehyde	50000	<1.48 lb/ton of 37% formaldehyde used	No information was available on the basis of these estimates or the types of control involved	104
1,4-Butanediol production	2869	Process - general	301250	Formaldehyde	50000	0 lb/ton of 37% formaldehyde used	Controlled by flare, no information was available on the basis of this estimate	104
Acetaldehyde production	2869	Off-air vent	30112013	Acetaldehyde	75070	8.4 lb/ton acetaldehyde	Controlled, high pressure scrubber, data from one plant	143
Acetaldehyde production	2869	Off-gas vent	30112014	Chloroethane	75003	2.2 lb/ton acetaldehyde	Controlled, low pressure scrubber, data from one plant	143
Acetaldehyde production	2869	Off-gas vent	30112014	Chloroform	67663	0.8 lb/ton acetaldehyde	Controlled, low pressure scrubber, data from one plant	143
Acetaldehyde production	2869	Off-gas vent	30112014	Chloromethane	74873	2.2 lb/ton acetaldehyde	Controlled, low pressure scrubber, data from one plant	143
Acetaldehyde production	2869	Off-gas vent	30112014	Methylene chloride	75092	0.2 lb/ton acetaldehyde	Controlled, low pressure scrubber, data from one plant	143
Acetic anhydride production	2869	Reaction by-product gas	30113302	Ethylene	74851	3.0 lb/ton acetic anhydride produced	Based on data from three plants	152
Acetic anhydride production	2869	Reaction by-product gas	30113302	1,3-Propadiene	463490	3.8 lb/ton acetic anhydride produced	Based on data from three plants	152
Acetone/phenol manufacture from cumene	2865	Cumene peroxidation vent	30120202	Acetaldehyde	75070	0.0042 lb/ton phenol	Controlled (not specified), based on sampling, 1977 data, average factors	129
Acetone/phenol manufacture from cumene	2865	Cleavage section vents (combined)	30120211	Acetone	67641	1.2 x 10E-5 lb/ton phenol	Controlled (unspecified), based on test data, 1977 data, average factors	129
Acetone/phenol manufacture from cumene	2865	Cumene peroxidation vent	30120203	Acetone	67641	1.2 lb/ton phenol	Controlled (not specified), based on sampling, 1977 data, average factors	129

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Acetone/phenol manufacture from cumene	2865	Storage tank vents	407228	Acetone	67641	0.12 lb/ton phenol	Controlled (unspecified), based on test data, 1977 data, average factors	125
Acetone/phenol manufacture from cumene	2865	Cleavage section vents (combined)	30120211	Acetophenone	98862	8.8 x 10E-6 lb/ton phenol	Controlled (unspecified), based on test data, 1977 data, average factors	125
Acetone/phenol manufacture from cumene	2865	Cumene peroxidation vent	30120202	Acetophenone	98862	0.0172 lb/ton phenol	Controlled (not specified), based on sampling, 1977 data, average factors	125
Acetone/phenol manufacture from cumene	2865	Cumene peroxidation vent	30120202	Butylbenzene	104518	0.0044 lb/ton phenol	Controlled (not specified), based on sampling, 1977 data, average factors	125
Acetone/phenol manufacture from cumene	2865	Cleavage section vents (combined)	30120211	Crotylaldehyde	4170303	1.7 x 10E-7 lb/ton phenol	Controlled (unspecified), based on test data, 1977 data, average factors	125
Acetone/phenol manufacture from cumene	2865	Cumene peroxidation vent	30120202	Crotylaldehyde	4170303	0.011 lb/ton phenol	Controlled (not specified), based on sampling, 1977 data, average factors	125
Acetone/phenol manufacture from cumene	2865	Cumene peroxidation vent	30120202	Diesthylstyrene	27576030	0.0001 lb/ton phenol	Controlled (not specified), based on sampling, 1977 data, average factors	125
Acetone/phenol manufacture from cumene	2865	Cleavage section vents (combined)	30120211	Ethylbenzene	100414	1.0 x 10E-6 lb/ton phenol	Controlled (unspecified), based on test data, 1977 data, average factors	125
Acetone/phenol manufacture from cumene	2865	Cumene peroxidation vent	30120202	Ethylbenzene	100414	0.00084 lb/ton phenol	Controlled (not specified), based on sampling, 1977 data, average factors	125
Acetone/phenol manufacture from cumene	2865	Cleavage section vents (combined)	30120211	Formaldehyde	50000	9.2 x 10E-7 lb/ton phenol	Controlled (unspecified), based on test data, 1977 data, average factors	125
Acetone/phenol manufacture from cumene	2865	Cumene peroxidation vent	30120202	Formaldehyde	50000	0.002 lb/ton phenol	Controlled (not specified), based on sampling, 1977 data, average factors	125
Acetone/phenol manufacture from cumene	2865	Cleavage section vents (combined)	30120211	Methyl ethyl ketone	78933	3.6 x 10E-5 lb/ton phenol	Controlled (unspecified), based on test data, 1977 data, average factors	125
Acetone/phenol manufacture from cumene	2865	Cumene peroxidation vent	30120202	Methyl ethyl ketone	78933	0.10 lb/ton phenol	Controlled (not specified), based on sampling, 1977 data, average factors	125
Acetone/phenol manufacture from cumene	2865	Cleavage section vents (combined)	30120211	3-Methylbutyraldehyde	590863	1.7 x 10E-6 lb/ton phenol	Controlled (unspecified), based on test data, 1977 data, average factors	125
Acetone/phenol manufacture from cumene	2865	Cumene peroxidation vent	30120202	Methylstyrene	25013154	0.0002 lb/ton phenol	Controlled (not specified), based on sampling, 1977 data, average factors	125
Acetone/phenol manufacture from cumene	2865	Storage tank vents	40736	Methylstyrene	25013154	0.004 lb/ton phenol	Controlled (unspecified), based on test data, 1977 data, average factors	125
Acetone/phenol manufacture from cumene	2865	Cumene peroxidation vent	30120202	Naphthalene	91203	0.0002 lb/ton phenol	Controlled (unspecified), based on test data, 1977 data, average factors	125

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Acetone/phenol manufacture from cumene	2865	Cleavage section vents (combined)	30120211	2-Phenyl-1-propanol	1123859	4.8 x 10E-6 lb/ton phenol	Controlled (unspecified), based on test data, 1977 data, average factors	125
Acetone/phenol manufacture from cumene	2865	Cumene peroxidation vent	30120202	2-Phenyl-1-propanol	1123859	0.0018 lb/ton phenol	Controlled (not specified), based on sampling, 1977 data, average factors	125
Acetone/phenol manufacture from cumene	2865	Cumene peroxidation vent	30120202	Propanol	71238	0.022 lb/ton phenol	Controlled (unspecified), based on test data, 1977 data, average factors	125
Acetone/phenol manufacture from cumene	2869	Cleavage section vents (combined)	30109151	Cumene	98828	0.28 lb/ton phenol produced	Controlled (condensation), based on engineering judgement	15
Acetone/phenol manufacture from cumene	2869	Cumene peroxidation vent	30109151	Cumene	98828	1.72 lb/ton phenol produced	Controlled (adsorption or condensation), based on industry sources	15
Acetone/phenol manufacture from cumene	2869	Storage tank vents combined	30109151	Cumene	98828	0.056 lb/ton phenol produced	Controlled (floating roof), based on engineering judgement	15
Acetone/phenol manufacture from cumene	2869	Cumene peroxidation vent	30109151	Naphthalene	91203	<0.0002 lb naphthalene/ton phenol produc	Controlled (adsorption or condensation), based on industry sources	15
Acetone/phenol manufacture from cumene	2869	Product transport loading vents, combined	30109151	Phenol	108952	0.22 lb/ton phenol produced	Control unknown, average of two industry estimates	15
Acetone/phenol manufacture from cumene	2869	Storage tank vents combined	30109151	Phenol	108952	0.102 lb/ton phenol produced	Uncontrolled, average of a calculated value and an industry estimate	15
Acrolein production	2869	Acrolein process scrubber overheads	3011203	Acrolein	107028	0.04 lb/ton acrolein produced	Incinerator, based on 8.38 x 10E7 lb/yr capacity plant	140
Acrolein production	2869	Process fugitive emissions	30112037	Acrolein	107028	1.9 lb/ton acrolein produced	Leak detection and repair, based on 8.38 x 10E7 lb/yr capacity plant	140
Acrylic acid production	2869	Process fugitive emissions	30113227	Acrolein	107028	8 lb/ton acrylic acid produced	Uncontrolled, plant of 1.5 x 10E5 lb capacity, see reference for more data	140
Acrylic acid production	2869	Entire process	30113221	Propylene	115071	0.8 lb/ton acrylic acid produced	Controlled (98% incin.), engineering judgement, ratio propane emissions	90
Acrylic acid production - propylene oxidation	2869	Quench absorber off-gas	30113222	Acetaldehyde	75070	0.2 lb/ton acrylic acid produced	Based on data from one plant	151
Acrylic acid production - propylene oxidation	2869	Quench absorber off-gas	30113222	Acetic acid	64197	2.8 lb/ton acrylic acid produced	Based on data from one plant	151
Acrylic acid production - propylene oxidation	2869	Quench absorber off-gas	30113222	Acetone	67641	2.6 lb/ton acrylic acid produced	Based on data from one plant	151
Acrylic acid production - propylene oxidation	2869	Quench absorber off-gas	30113222	Acrolein	107028	9.0 lb/ton acrylic acid produced	Based on data from one plant	151

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Acrylic acid production - propylene oxidation	2869	Quench absorber off-gas	30113222	Acrylic acid	79107	36.0 lb/ton acrylic acid produced	Based on data from one plant	151
Acrylic acid production - propylene oxidation	2869	Quench absorber off-gas	30113222	Ethyl acrylate	140885	2.4 lb/ton acrylic acid produced	Based on data from one plant	151
Acrylonitrile production	2869	Absorber vent	30125406	Acrylonitrile	107131	0.20 lb/ton acrylonitrile produced	Uncontrolled	162
Acrylonitrile production	2869	Absorber vent	30125406	Acrylonitrile	107131	0.004 lb/ton acrylonitrile produced	Thermal incinerator	162
Acrylonitrile production	2869	Absorber vent (start up)	30125407	Acrylonitrile	107131	0.374 lb/ton acrylonitrile produced	No control, emissions vented to avoid explosion, factor is average for 1 year	162
Acrylonitrile production	2869	Acrylonitrile run tank vents	407076	Acrylonitrile	107131	0.256 lb/ton acrylonitrile produced	Uncontrolled, assumed fixed roof	162
Acrylonitrile production	2869	Acrylonitrile run tank vents	407076	Acrylonitrile	107131	0.00256 lb/ton acrylonitrile produced	Water scrubber	162
Acrylonitrile production	2869	Acrylonitrile storage vents	407076	Acrylonitrile	107131	1.062 lb/ton acrylonitrile produced	Uncontrolled, assumed fixed roof	162
Acrylonitrile production	2869	Acrylonitrile storage vents	407076	Acrylonitrile	107131	0.01062 lb/ton acrylonitrile produced	Water scrubber	162
Acrylonitrile production	2869	Barge loading	30125409	Acrylonitrile	107131	0.3 lb/ton acrylonitrile produced	Uncontrolled	162
Acrylonitrile production	2869	Barge loading	30125409	Acrylonitrile	107131	0.003 lb/ton acrylonitrile produced	Water scrubber	162
Acrylonitrile production	2869	Column vents	30125408	Acrylonitrile	107131	10 lb/ton acrylonitrile produced	Uncontrolled	162
Acrylonitrile production	2869	Column vents	30125408	Acrylonitrile	107131	0.20 lb/ton acrylonitrile produced	Flare	162
Acrylonitrile production	2869	Crude acrylonitrile storage vents	407076	Acrylonitrile	107131	0.096 lb/ton acrylonitrile produced	Uncontrolled, assumed fixed roof	162
Acrylonitrile production	2869	Crude acrylonitrile storage vents	407076	Acrylonitrile	107131	0.00096 lb/ton acrylonitrile produced	Water scrubber	162
Acrylonitrile production	2869	Fugitive emissions	30125409	Acrylonitrile	107131	1.612 lb/ton acrylonitrile produced	Uncontrolled	162
Acrylonitrile production	2869	Fugitive emissions	30125409	Acrylonitrile	107131	0.476 lb/ton acrylonitrile produced	Leak detection and repair	162

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Acrylonitrile production	2869	Tank car loading venting	301254	Acrylonitrile	107131	0.334 lb/ton acrylonitrile produced	Uncontrolled	142
Acrylonitrile production	2869	Tank car loading venting	30125409	Acrylonitrile	107131	0.0034 lb/ton acrylonitrile produced	Water scrubber	142
Acrylonitrile production	2869	Absorber	30125406	Propylene	115071	1.2 lb/ton acrylonitrile produced	Incinerator control, assumed 98% efficient	85
Acrylonitrile production	2869	Columns	30125408	Propylene	115071	6 lb/ton acrylonitrile produced	Uncontrolled, based on test data and engineering judgement	85
Acrylonitrile production	2869	Columns	30125408	Propylene	115071	0.12 lb/ton acrylonitrile	Incinerator control, assumed 98% efficient	85
Acrylonitrile production - SOHIO process	2869	Absorber vent	30125406	Acetonitrile	75058	4.0 lb/ton acrylonitrile produced	Uncontrolled, based on data from plants and EPA studies	149
Acrylonitrile production - SOHIO process	2869	Absorber vent	30125406	Acrylonitrile	107131	0.2 lb/ton acrylonitrile produced	Uncontrolled, based on data from plants and EPA studies	149
Acrylonitrile production - SOHIO process	2869	Absorber vent	30125406	Hydrogen cyanide	74908	0.4 lb/ton acrylonitrile produced	Uncontrolled, based on data from plants and EPA studies	149
Acrylonitrile production - SOHIO process	2869	Absorber vent	30125406	Propane	74986	121.4 lb/ton acrylonitrile produced	Uncontrolled, based on data from plants and EPA studies	149
Acrylonitrile production - SOHIO process	2869	Absorber vent	30125406	Propylene	115071	60.0 lb/ton acrylonitrile produced	Uncontrolled, based on data from plants and EPA studies	149
Acrylonitrile-butadiene-styrene copolymer production	2821	Equipment leak	30119380	1,3-Butadiene	106990	2.36 tons/yr	Uncontrolled, average emission factor based on 2 facilities	144
Acrylonitrile-butadiene-styrene copolymer production	2821	Process vents	30119301	1,3-Butadiene	106990	9.48 lb/ton ABS polymer produced	Uncontrolled, average emission factor based on 3 facilities	144
Acrylonitrile-butadiene-styrene copolymer production	2821	Process vents	30119301	1,3-Butadiene	106990	4.22 lb/ton ABS polymer produced	Controlled (unspecified), average emission factor based on 3 facilities	144
Adhesives application		Entire process	40200701	Tetrachloroethylene	127184	2000 lb/ton PCE in adhesive applied	Uncontrolled, based on engineering judgement	68
Adhesives application		Entire process	40200701	Trichloroethylene	79016	2000 lb/ton TCE in adhesive applied	Uncontrolled, based on engineering judgement	105
Adhesives application		End use	40200701	Xylenes (mixed isomers)	1330207	2000 lb/ton xylene consumed	Engineering judgement	77
Adipic acid production	2869	Adipic acid drying, cooling, storage	30100106	Adipic acid	124049	0.8 lb/ton produced	Baghouse	97

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Adipic acid production	2869	Adipic acid refining	30100105	Adipic acid	124049	0.1 lb/ton produced	Uncontrolled	97
Adipic acid production	2869	Fugitive emissions	30100180	Phenol	108952	0.26 lb/ton used	Data from site visit	13
Adipic acid production	2869	General emissions	30100101	Phenol	108952	2.6 lb/ton used	Data from site visit	13
Adipic acid production	2869	Storage	30100106	Phenol	108952	0.02 lb/ton used	Data from site visit	13
Adiponitrile production	2869	Equipment leak	30125420	1,3-Butadiene	106990	0.2 lb/ton ADN produced	Uncontrolled, based on emissions and capacities of two plants	82
Adiponitrile production	2869	Process vents	30125415	1,3-Butadiene	106990	0.10 lb/ton ADN produced	Controlled, based on emissions and capacities of two plants	82
Adiponitrile production	2869	Wastewater and handling	301254	1,3-Butadiene	106990	0.018 lb/ton ADN	Uncontrolled, based on emissions and capacities of two plants	82
Adiponitrile production	2869	Secondary sources (wastewater, etc.)	30125420	1,3-Butadiene	106990	0.020 lb/ton ADN produced	Uncontrolled, average emission factor based on 2 facilities	166
Adiponitrile production	2869	Equipment leak	30125420	1,3-Butadiene	106990	3.99 tons/yr	Uncontrolled, average emission factor based on 2 facilities	166
Adiponitrile production	2869	Process vents	30125415	1,3-Butadiene	106990	3.35 tons/yr	Uncontrolled, average emission factor based on 2 facilities	166
Adiponitrile production	2869	Process vents	30125415	1,3-Butadiene	106990	0.066 ton/yr ADN produced	Controlled (unspecified), average emission factor based on 2 facilities	166
Aerosol packaging		Entire process		Methylene chloride	75092	19.4 lb/ton MC consumed	Uncontrolled, based on aggregate emissions/consumption for 10 questionnaire respondents	74,75
Aerosol packaging		Entire process		Tetrachloroethylene	127184	7.4 lb/ton of PCE consumed	Uncontrolled, based on aggregate est. of emis. & consumption for 5 facilities' questionnaires	74,75
Aerosol products use		Entire process		Methylene chloride	75092	2000 lb/ton MC contained in product appl	Uncontrolled, based on engineering judgement	69
Aerosol products use		Entire process		Tetrachloroethylene	127184	2000 lb/ton of PCE in product applied	Uncontrolled, based on engineering judgement	68
Agricultural industry-field burning of plastic crop covers	191	Used black plastic		Benzene	71432	0.554 ug/m3	Experimental simulation, plastic sheet = 1 lb., GC/FID test from VOST samples	210
Agricultural industry-field burning of plastic crop covers	191	Unused black plastic		Benzene	71432	0.483 ug/m3	Experimental simulation, plastic sheet = 1 lb., GC/FID test from VOST samples	210
Agricultural industry-field burning of plastic crop covers	191	Used black plastic		Benzene	71432	0.280 ug/m3	Experimental simulation, plastic sheet = 1 lb., GC/FID test from VOST samples	210

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Agricultural industry-field burning of plastic crop covers	191	Unused black plastic		Benzene	71432	1.085 ug/m3	Experimental simulation, plastic sheet = 1 lb., GC/FID test from VOST samples	210
Agricultural industry-field burning of plastic crop covers	191	Used black plastic		Ethylbenzene	100414	0.077 ug/m3	Experimental simulation, plastic sheet = 1 lb., GC/FID test from VOST samples, range is 0.028 - 0.126 ug/m3	210
Agricultural industry-field burning of plastic crop covers	191	Unused black plastic		Ethylbenzene	100414	0.040 ug/m3	Experimental simulation, plastic sheet = 1 lb., GC/FID test from VOST samples, range is 0.013 - 0.066 ug/m3	210
Agricultural industry-field burning of plastic crop covers	191	Used black plastic		1-Hexene	592416	0.499 ug/m3 of plastic	Experimental simulation, plastic sheet = 1 lb.,estimated from average benzene and toluene response	210
Agricultural industry-field burning of plastic crop covers	191	Unused black plastic		1-Hexene	592416	0.336 ug/m3 of plastic	Experimental simulation, plastic sheet = 1 lb.,estimated from average benzene and toluene response	210
Agricultural industry-field burning of plastic crop covers	191	Used black plastic		1-Hexene	592416	0.098 ug/m3 of plastic	Experimental simulation, plastic sheet = 1 lb.,estimated from average benzene and toluene response	210
Agricultural industry-field burning of plastic crop covers	191	Unused black plastic		1-Hexene	592416	0.023 ug/m3 of plastic	Experimental simulation, plastic sheet = 1 lb.,estimated from average benzene and toluene response	210
Agricultural industry-field burning of plastic crop covers	191	Used black plastic		Toluene	108883	0.179 ug/m3	Experimental simulation, plastic sheet = 1 lb., GC/FID test from VOST samples, avg. of 2 values, range is 0.075 - 0.282 ug/m3	210
Agricultural industry-field burning of plastic crop covers	191	Unused black plastic		Toluene	108883	0.144 ug/m3	Experimental simulation, plastic sheet = 1 lb., GC/FID test from VOST samples, avg. of 2 values, range is 0.104 - 0.183 ug/m3	210
Agricultural spraying	0721	Entire process		Mercury	7439976	1000 lb/ton of contained Hg	Uncontrolled, based on engineering judgement	113
Aluminum reduction	3334	Anode bake plant	30300105	Radionuclides		0.43 nCi U-238/metric ton Al	Controlled with fluidized-bed scrubber, rough est.	37
Aluminum reduction	3334	Anode bake plant	30300105	Radionuclides		0.43 nCi U-234/metric ton Al	Controlled with fluidized-bed scrubber, rough est.	37
Aluminum reduction	3334	Anode bake plant	30300105	Radionuclides		0.31 nCi Th-230/metric ton Al	Controlled with fluidized-bed scrubber, rough est.	37
Aluminum reduction	3334	Anode bake plant	30300105	Radionuclides		0.47 nCi Ra-226/metric ton Al	Controlled with fluidized-bed scrubber, rough est.	37

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Aluminum reduction	3334	Anode bake plant	30300105	Radionuclides		1.6 nCi Pb-210/metric ton Al	Controlled with fluidized-bed scrubber, rough est.	37
Aluminum reduction	3334	Anode bake plant	30300105	Radionuclides		1.6 nCi Po-210/metric ton Al	Controlled with fluidized-bed scrubber, rough est.	37
Aluminum reduction	3334	Anode bake plant	30300105	Radionuclides		0.25 nCi Th-232/metric ton Al	Controlled with fluidized-bed scrubber, rough est.	37
Aluminum reduction	3334	Anode bake plant	30300105	Radionuclides		0.25 nCi Ra-228/metric ton Al	Controlled with fluidized-bed scrubber, rough est.	37
Aluminum reduction	3334	Main stack	303001	Radionuclides		67 nano Ci U-238/metric ton Al	Controlled with fluidized-bed scrubber, rough est.	37
Aluminum reduction	3334	Main stack	303001	Radionuclides		67 nano Ci U-234/metric ton Al	Controlled with fluidized-bed scrubber, rough est.	37
Aluminum reduction	3334	Main stack	303001	Radionuclides		140 nano Ci Th-230/metric ton Al	Controlled with fluidized-bed scrubber, rough est.	37
Aluminum reduction	3334	Main stack	303001	Radionuclides		23 nCi Ra-226/metric ton Al	Controlled with fluidized-bed scrubber, rough est.	37
Aluminum reduction	3334	Main stack	303001	Radionuclides		540 nCi Pb-210/metric ton Al	Controlled with fluidized-bed scrubber, rough est.	37
Aluminum reduction	3334	Main stack	303001	Radionuclides		540 nCi Po-210/metric ton Al	Controlled with fluidized-bed scrubber, rough est.	37
Aluminum reduction	3334	Main stack	303001	Radionuclides		110 nCi Th-232/metric ton Al	Controlled with fluidized-bed scrubber, rough est.	37
Aluminum reduction	3334	Main stack	303001	Radionuclides		110 nCi Ra-228/metric ton Al	Controlled with fluidized-bed scrubber, rough est.	37
Aluminum reduction	3334	Main stack	303001	Radionuclides		930 pCi U-238/metric ton Al	Controlled with fluidized-bed scrubber, rough est., center-worked prebake cells	39
Aluminum reduction	3334	Main stack	303001	Radionuclides		930 pCi U-234/metric ton Al	Controlled with fluidized-bed scrubber, rough est., center-worked prebake cells	39
Aluminum reduction	3334	Main stack	303001	Radionuclides		1900 pCi Th-230/metric ton Al	Controlled with fluidized-bed scrubber, rough est., center-worked prebake cells	39
Aluminum reduction	3334	Main stack	303001	Radionuclides		430 pCi Ra-226/metric ton Al	Controlled with fluidized-bed scrubber, rough est., center-worked prebake cells	39
Aluminum reduction	3334	Main stack	303001	Radionuclides		2500 pCi Pb-210/metric ton Al	Controlled with fluidized-bed scrubber, rough est., center-worked prebake cells	39

EMISSION

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Aluminum reduction	3334	Main stack	303001	Radionuclides		2100 pCi Po-210/metric ton Al	Controlled with fluidized-bed scrubber, rough est., center-worked prebake cells	39
Ammonia synthesis	287	Condensate steam stripper	30100309	Ammonia	7664417	2.2 lbs/ton product	Sources emitting > 100 tons NH3/year, uncontrolled	97, 179
Ammonia synthesis	287	Carbon dioxide regenerator	30100308	Ammonia	7664417	2.0 lbs/ton product	Sources emitting > 100 tons NH3/year, uncontrolled	97, 179
Ammonium nitrate production	2873	Evaporation/condensation operations	30102717	Ammonia	7664417	0.54 - 33.4 lb/ton NH4 NO3 produced	Uncontrolled, presented as range because of data variations	97
Ammonium nitrate production	2873	High density prill coolers	30102714	Ammonia	7664417	0.04 lb/ton NH4 NO3 produced	Uncontrolled, represents coolers and pre-coolers	97
Ammonium nitrate production	2873	Low density prill coolers	30102724	Ammonia	7664417	0.30 lb/ton NH4 NO3 produced	Uncontrolled, represents coolers and pre-coolers, sources emitting >100 tons NH3/year	97, 179
Ammonium nitrate production	2873	Low density prill dryers	30102725	Ammonia	7664417	0 - 3.18 lb/ton NH4 NO3 produced	Uncontrolled, presented as range due to data variations, represents dryer and pre-dryer	97
Ammonium nitrate production	2873	Neutralizer	30102704	Ammonia	7664417	0.86 - 36.0 lb/ton NH4 NO3 produced	Uncontrolled, presented as range because of data variations	97
Ammonium nitrate production	2873	Pan granulator coolers	30102730	Ammonia	7664417	0 lb/ton NH4 NO3 produced	Represents cooler and pre-cooler	97
Ammonium nitrate production	2873	Rotary drum granulator coolers	30102729	Ammonia	7664417	1.18 lb/ton NH4 NO3 produced	Uncontrolled, represents cooler and pre-cooler	97
Ammonium nitrate production	2873	Solids formation - low density prill towers	30102722	Ammonia	7664417	0.26 lb/ton NH4 NO3 produced	Uncontrolled, sources emitting >100 tons NH3/year	97, 179
Ammonium nitrate production	2873	Solids formation - pan granulators	30102708	Ammonia	7664417	0.14 lb/ton NH4 NO3 produced	Uncontrolled	97
Ammonium nitrate production	2873	Solids formation - rotary drum granulators	30102707	Ammonia	7664417	59.4 lb/ton NH4 NO3 produced	Uncontrolled	97
Ammonium nitrate production	2873	Solids formations - high density prill towers	30102712	Ammonia	7664417	57.2 lb/ton NH4 NO3 produced	Uncontrolled, sources emitting >100 tons NH3/year	97, 179
Ammonium nitrate production	2873	Granulator cooler	30102706	Ammonia	7664417	1 lb/ton product	Sources emitting > 100 tons NH3/year	179
Ammonium nitrate production	2873	Low density prill dryers	30102725	Ammonia	7664417	1.6 lbs/ton product	Sources emitting > 100 tons NH3/year	179
Ammonium nitrate production	2873	Granulation	30102708	Ammonia	7664417	90 lbs/ton product	Sources emitting > 100 tons NH3/year	179
Ammonium nitrate production	2873	Evaporation/condensation operations	30102717	Ammonia	7664417	17 lbs/ton product	Sources emitting > 100 tons NH3/year	179

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Ammonium nitrate production	2873	Neutralizer	30102704	Ammonia	7664417	18 lbs/ton product	Sources emitting > 100 tons NH3/year	179
Ammonium phosphate production	2874	Total plant emissions	301030	Ammonia	7664417	0.14 lb/ton phosphate produced	Controlled (not specified), sources emitting >100 tons NH3/year	97, 179
Ammonium phosphate production	2874	Dryer/cooler	30103001	Fluoride	16984488	0.03 lb/ton phosphate produced	Controlled (not specified)	97
Ammonium phosphate production	2874	Product sizing and material transfer	30103003	Fluoride	16984488	0.01 lb/ton phosphate produced	Controlled (not specified)	97
Ammonium phosphate production	2874	Reactor/ammoniator-granulator	30103002	Fluoride	16984488	0.09 lb/ton phosphate produced	Controlled (not specified)	97
Ammonium sulfate production	28	Dryer	301	Ammonium sulfate (2:1)	7783202	0.32 lb/ton ammonium sulfate produced	Wet scrubber, based on test data from all types of AS dryers	129
Ammonium sulfate production - caprolactam by-product	2869	Fluidized-bed dryer	30121009	Ammonium sulfate (2:1)	7783202	220 lb/ton ammonium sulfate produced	Uncontrolled, based on source test	129
Ammonium sulfate production - caprolactam by-product	2869	Rotary dryer	30121009	Ammonium sulfate (2:1)	7783202	52 lb/ton ammonium sulfate produced	Uncontrolled, range of 0.8-154 lb/ton, based on test data	129
Ammonium sulfate production - caprolactam by-product	2869	Rotary dryer	30121009	Caprolactam	105602	2.42 lb/hr	Based on test data	129
Ammonium sulfate production - coke oven by-product	3312	Rotary dryer	303003	Ammonium sulfate (2:1)	7783201	20 lb/ton ammonium sulfate produced	Uncontrolled	129
Ammonium sulfate production - synthetic process	2873	Rotary dryer	30113004	Ammonium sulfate (2:1)	7783202	52 lb/ton ammonium sulfate produced	Uncontrolled, range of 0.8-154 lb/ton, based on test data	129
Aniline production	2869	Process vents	301034	Benzene	71432	0.0114 lb/ton aniline	Uncontrolled, from data provided by producer	132
Animal feed defluorination		Thermal defluorination process		Fluoride	16984488	190 lbs/ton P2O5	Uncontrolled emissions based on a material balance	184
Animal feed defluorination		Thermal defluorination process		Fluoride	16984488	0.04-0.49 lbs/ton P2O5	Controlled but device not specified	184
Animal feed defluorination		Feed mixing and drying		Fluoride	16984488	0.013 lbs/ton P2O5	Controlled by a wet scrubber	184
Asbestos - cement pipe manufacturing	3292	Entire process	30501120	Asbestos	1332214	61.48 lb/ton asbestos consumed	Calculated average uncontrolled factor, calculated range 39.2-93.8	[illegible]

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Asbestos - cement pipe manufacturing	3292	Entire process	30501120	Asbestos	1332214	0.152 lb/ton asbestos consumed	Calculated average controlled factor, calculated range 0-1.04	100
Asbestos - cement sheet manufacturing	3292	Entire process	30501120	Asbestos	1332214	295.8 lb/ton asbestos consumed	Calculated average uncontrolled factor, calculated range 99.4-455.2	100
Asbestos - cement sheet manufacturing	3292	Entire process	30501120	Asbestos	1332214	0.732 lb/ton asbestos consumed	Calculated average controlled factor, calculated range 0-55.52	100
Asbestos building waste disposal		Dumping		Asbestos	1332214	3.74 x 10E-6 lb/cubic foot waste	Best estimate of uncontrolled emission, range 3.12 x 10E-8 to 0.00131	100
Asbestos building waste disposal		Leveling and compaction at dump site		Asbestos	1332214	1.4 x 10-4 lb/cubic foot waste	Best estimate of uncontrolled emission, range 1.248 x 10E-5 to 3.04 x 10E-4	100
Asbestos building waste disposal		Wind erosion after first year at dump site		Asbestos	1332214	2.9 x 10E-4 lb/cubic foot waste	Best estimate of uncontrolled emission, range 9.4 x 10E-5 to 4.4 x 10E-4	100
Asbestos building waste disposal		Wind erosion during first year at dump site		Asbestos	1332214	0.00237 lb/cubic foot waste	Best estimate of uncontrolled emission, range 6.24 x 10E-4 to 0.00443	100
Asbestos coatings and sealants manufacturing	3292	Entire process		Asbestos	1332214	8.12 lb/ton asbestos consumed	Calculated average uncontrolled factor, calculated range 1.27 x 10E-8 - 2000	100
Asbestos coatings and sealants manufacturing	3292	Entire process		Asbestos	1332214	0.134 lb/ton asbestos consumed	Calculated average controlled factor, calculated range 0-1000	100
Asbestos friction materials manufacturing	3292	Entire process		Asbestos	1332214	884.4 lb/ton asbestos consumed	Calculated average uncontrolled factor, calculated range 4.38-2000	100
Asbestos friction materials manufacturing	3292	Entire process		Asbestos	1332214	9.74 lb/ton asbestos consumed	Calculated average controlled factor, calculated range 0.004-20	100
Asbestos gaskets and packings manufacturing	3292	Entire process		Asbestos	1332214	2.48 lb/ton asbestos consumed	Calculated average uncontrolled factor, calculated range 0.20-17.2	100
Asbestos gaskets and packings manufacturing	3292	Entire process		Asbestos	1332214	0.00082 lb/ton asbestos consumed	Calculated average controlled factor, calculated range 0-0.18	100
Asbestos insulation materials manufacturing	3292	Entire process		Asbestos	1332214	20.6 lb/ton asbestos consumed	Calculated average uncontrolled factor, calculated range 4.76-37	100
Asbestos insulation materials manufacturing	3292	Entire process		Asbestos	1332214	0.68 lb/ton asbestos consumed	Calculated average controlled factor, calculated range 0.048-3.7	100
Asbestos milling	1499	Entire process	305032	Asbestos	1332214	129.1 lb/ton asbestos consumed	Calculated average uncontrolled factor, calculated range 80.64-209.6	100
Asbestos milling	1499	Entire process	305032	Asbestos	1332214	1.492 lb/ton asbestos consumed	Calculated average controlled factor, calculated range 0.008-0.42	100

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Asbestos milling	1499	Entire process	305032	Asbestos	1332214	100 lb/ton asbestos produced	No control	33
Asbestos milling	1499	Entire process	305032	Asbestos	1332214	80 lb/ton asbestos produced	50% control	33
Asbestos milling	1499	Entire process	305032	Asbestos	1332214	20 lb/ton asbestos produced	80% control	33
Asbestos milling	1499	Milling dusts	305032	Nickel	7440020	0.000018 lb/ton total asbestos produced	Controlled by fabric filter, based on analysis of one mill	110
Asbestos mining	1499	Entire process	305031	Asbestos	1332214	6 lb/ton asbestos produced	90% control	33
Asbestos mining	1499	Hauling	305031	Asbestos	1332214	2 lb/ton asbestos produced	Uncontrolled	33
Asbestos mining	1499	Loading	30503104	Asbestos	1332214	2 lb/ton asbestos produced	Uncontrolled	33
Asbestos mining	1499	Mining	305031	Asbestos	1332214	4 lb/ton asbestos produced	Uncontrolled	33
Asbestos mining	1499	Unloading	30503107	Asbestos	1332214	2 lb/ton asbestos produced	Uncontrolled	33
Asbestos paper manufacturing	2292	Entire process		Asbestos	1332214	0.078 lb/ton asbestos consumed	Calculated average uncontrolled factor, calculated range 0.0002-1.64	100
Asbestos paper manufacturing	2292	Entire process		Asbestos	1332214	0.00076 lb/ton asbestos consumed	Calculated average controlled factor, calculated range 10.2 x 10E-8 to 0.08	100
Asbestos product fabrication	2292	Asbestos cement products	30501120	Asbestos	1332214	1.0 lb/ton asbestos produced	Controlled	33
Asbestos product fabrication	2292	Asbestos paper		Asbestos	1332214	4 lb/ton asbestos produced	Uncontrolled	33
Asbestos product fabrication	2292	Asbestos paper		Asbestos	1332214	1.0 lb/ton asbestos produced	Controlled	33
Asbestos product fabrication	2292	Drilling asbestos cement sheet		Asbestos	1332214	283 fibers/cc air/o asbestos machined	Average of test results	22
Asbestos product fabrication	2292	Drilling millboard		Asbestos	1332214	105 fibers/cc air/o asbestos machined	Average of test results	22
Asbestos product fabrication	2292	Floor tile		Asbestos	1332214	4 lb/ton asbestos produced	Uncontrolled	33

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Asbestos product fabrication	3292	Floor tile		Asbestos	1332214	1.0 lb/ton asbestos produced	Controlled	33
Asbestos product fabrication	3292	Friction material production		Asbestos	1332214	6 lb/ton asbestos produced	Controlled	33
Asbestos product fabrication	3292	Grinding brake shoes		Asbestos	1332214	465 fibers/cc air/g asbestos machined	Average of test results	22
Asbestos product fabrication	3292	Sawing asbestos cement sheet		Asbestos	1332214	1838 fibers/cc air/g asbestos machined	Average of test results, cut-off wheel saw	22
Asbestos product fabrication	3292	Sawing asbestos cement sheet		Asbestos	1332214	305 fibers/cc air/g asbestos machined	Average of test results, toothed blade saw	22
Asbestos product fabrication	3292	Sawing asbestos millboard		Asbestos	1332214	647 fibers/cc air/g asbestos machined	Average of test results, toothed blade saw	22
Asbestos product fabrication	3292	Textiles		Asbestos	1332214	40 lb/ton asbestos produced	Uncontrolled	33
Asbestos product fabrication	3292	Textiles		Asbestos	1332214	2 lb/ton asbestos produced	Controlled	33
Asbestos product usage		Brake linings		Asbestos	1332214	10 lb/ton asbestos produced	Uncontrolled	33
Asbestos product usage		Construction industry		Asbestos	1332214	24 lb/ton asbestos produced		33
Asbestos product usage		Insulating cement		Asbestos	1332214	24 lb/ton asbestos produced	Controlled	33
Asbestos product usage		Steel fireproofing		Asbestos	1332214	10 lb/ton asbestos produced	Controlled	33
Asbestos textiles manufacturing	3292	Entire process		Asbestos	1332214	63.7 lb/ton asbestos consumed	Calculated average uncontrolled factor, calculated range 26.7-88.8	100
Asbestos textiles manufacturing	3292	Entire process		Asbestos	1332214	3.94 lb/ton asbestos consumed	Calculated average controlled factor, calculated range 0.026-35.8	100
Asbestos-reinforced plastics manufacturing	3292	Entire process		Asbestos	1332214	930.8 lb/ton asbestos consumed	Calculated average uncontrolled factor, calculated range 0.96-2000	100
Asbestos-reinforced plastics manufacturing	3292	Entire process		Asbestos	1332214	5.70 lb/ton asbestos consumed	Calculated average controlled factor, calculated range 9.66 x 10-5 - 200	100
Ascorbic acid production	2833	Plantwide emissions	301060	Chloroform	67663	4.92 x 10E5 lb/yr	Based on one facility (30 million lb/yr production)	140
Asphalt (hot mix) production	2951	Batch mix plant, rotary dryer and mixer	30500201	Polycyclic organic matter		3.94 x 10E-5 lb/ton asphalt produced	Cyclone and wet scrubber, virgin feed material	114

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Asphalt (hot mix) production	2951	Drum mix plant	30500205	Polycyclic organic matter		7.18 x 10E-5 lb/ton asphalt produced	Knock out box, using recycled feed	114
Asphalt (hot mix) production	2951	Drum mix plant	30500205	Polycyclic organic matter		3.38 x 10E-5 lb/ton asphalt produced	Knock out box and venturi scrubber, using recycled feed	114
Asphalt (hot mix) production	2951	Drum mix plant	30500205	Polycyclic organic matter		4.42 x 10E-5 lb/ton asphalt produced	Knock out box	114
Asphalt (hot mix) production	2951	Drum mix plant	30500205	Polycyclic organic matter		2.7 x 10E-5 lb/ton asphalt produced	Knock out box and venturi scrubber	114
Asphalt distribution/use	5032	Entire process		Benzene	71432	0.077 lb/ton asphalt applied	Benzene assumed to be 9.6% of THC	92
Asphalt distribution/use	5032	Entire process		Formaldehyde	50000	0.004 lb/ton asphalt applied	Formaldehyde assumed to be 0.5% of THC	92
Asphalt distribution/use	5032	Entire process		Polycyclic organic matter		0.0008 lb/ton asphalt applied	POM assumed to be 0.1% of THC	92
Asphalt production		Entire process		Formaldehyde	50000	0.00015 lb/ton asphalt produced	Control uncertain	94
Asphalt roofing material production	2952	Asphalt blowing still	30500101	Polycyclic organic matter		0.0304 lb/ton asphalt blown	Uncontrolled	114
Asphalt roofing material production	2952	Asphalt blowing still	30500101	Polycyclic organic matter		9.6 x 10E-5 lb/ton asphalt blown	Afterburner	114
Asphalt roofing material production	2952	Asphalt blowing still	30500101	Polycyclic organic matter		4.7 x 10E-6 lb/ton asphalt blown	Fume incinerator	114
Asphalt roofing material production	2952	Asphalt blowing still	30500101	Polycyclic organic matter		1.16 x 10E-5 lb/ton asphalt blown	Process heater furnace	114
Asphalt roofing material production	2952	Asphalt blowing still	30500101	Polycyclic organic matter		0.0096 lb/ton asphalt blown	Stack baffles, represents particulate POM	114
Asphalt roofing material production	2952	Saturator	30500103	Polycyclic organic matter		4.2 x 10E-4 lb/ton produced	Uncontrolled	114
Asphalt roofing material production	2952	Saturator	30500103	Polycyclic organic matter		1.92 x 10E-4 lb/ton produced	ESP controlled	114
Asphalt roofing material production	2952	Saturator	30500103	Polycyclic organic matter		6.6 x 10E-4 lb/ton produced	Uncontrolled	114
Asphalt roofing material production	2952	Saturator and asphalt storage tanks	30500103	Polycyclic organic matter		0.042 lb/ton produced	High velocity air filter	114

UNCONTROLLED

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Asphaltic concrete production	2951	Plant stack	305002	Aluminum	7429905	1.2 x 10E-7 - 2.67 x 10E-7 lb/ton concrete	Uncontrolled from a single plant	170
Asphaltic concrete production	2951	Plant stack	305002	Aluminum	7429905	1.74 x 10E-9 - 5.1 x 10E-9 lb/ton concrete	Controlled (unspecified) from a single plant	170
Asphaltic concrete production	2951	Plant stack	305002	Beryllium	7440417	2.50 x 10E-11 lb/ton concrete	Uncontrolled from a single plant, avg. of 2 values, range is 2.1 - 2.9 x 10E-11 lb/ton	170
Asphaltic concrete production	2951	Plant stack	305002	Beryllium	7440417	1.98 x 10E-12 lb/ton concrete	Controlled (unspecified) from a single plant	170
Asphaltic concrete production	2951	Plant stack	305002	Butyraldehyde	123728	0.0024 lb/ton concrete	Based on limited test data, cyclone/wet scrubber control	97
Asphaltic concrete production	2951	Plant stack	305002	Cadmium	7440439	2.46 x 10E-10 lb/ton concrete	Controlled (unspecified) from a single plant, avg. of 2 values, range is 9.24 x 10E-11 - 4.4 x 10E-10 lb/ton	170
Asphaltic concrete production	2951	Plant stack	305002	Cadmium	7440439	1.82 x 10E-10 lb/ton concrete	Uncontrolled from a single plant, avg. of 2 values, range is 1.81 x 10E-10 - 1.83 x 10E-10 lb/ton	170
Asphaltic concrete production	2951	Plant stack	305002	Calcium	7440702	1.73 x 10E-5 lb/ton concrete	Uncontrolled from a single plant, avg. of 2 values, range is 1.03 x 10E-5 - 2.42 x 10E-5 lb/ton	170
Asphaltic concrete production	2951	Plant stack	305002	Calcium	7440702	2.74 x 10E-7 lb/ton concrete	Controlled (unspecified) from a single plant, avg. of 2 values, range is 1.72 x 10E-7 - 3.81 x 10E-7 lb/ton	170
Asphaltic concrete production	2951	Plant stack	305002	Calcium	7440702	3.3 x 10E-11 lb/ton concrete	Controlled (unspecified) from a single plant	170
Asphaltic concrete production	2951	Plant stack	305002	Chromium	7440473	1.24 x 10E-10 lb/ton concrete	Controlled (unspecified) from a single plant. Avg. of 2 values, range is 7.57 x 10E-11 - 1.71 x 10E-10 lb/ton	170
Asphaltic concrete production	2951	Plant stack	305002	Chromium	7440473	1.21 x 10E-9 lb/ton	Uncontrolled from a single plant, avg. of 2 values, range is 1.10 x 10E-9 - 1.32 x 10E-9 lb/ton	170
Asphaltic concrete production	2951	Plant stack	305002	Formaldehyde	50000	0.00015 lb/ton concrete	Based on limited test data, cyclone/wet scrubber control	97
Asphaltic concrete production	2951	Plant stack	305002	Iron	15438310	3.72 x 10E-7 lb/ton concrete	Uncontrolled from a single plant, avg. of 2 values, range is 2.22 x 10E-7 - 5.21 x 10E-7 lb/ton	170
Asphaltic concrete production	2951	Plant stack	305002	Iron	15438310	4.73 x 10E-9 lb/ton concrete	Controlled (unspecified) from a single plant, avg. of 2 values, range is 3.08 x 10E-9 - 6.38 x 10E-9 lb/ton	170
Asphaltic concrete production	2951	Plant stack	305002	Lead	7439921	3.98 x 10E-11 lb/ton	Controlled (unspecified) from a single plant, avg. of 2 values, range is 3.7 x 10E-11 - 4.25 x 10E-11 lb/ton	170
Asphaltic concrete production	2951	Plant stack	305002	Lead	7439921	9.9 x 10E-10 lb/ton concrete	Uncontrolled from a single plant, average of 2 values, range is 8.8 x 10E-10 - 1.1 x 10E-9 lb/ton	170

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Asphaltic concrete production	2951	Plant stack	305002	Magnesium	7439954	8.8 x 10E-9 lb/ton concrete	Controlled (unspecified) from a single plant, mean of 2 values, range is 4.4 x 10E-9 - 1.32 x 10E-8 lb ton	170
Asphaltic concrete production	2951	Plant stack	305002	Magnesium	7439954	2.96 x 10E-7 lb/ton concrete	Uncontrolled from a single plant, mean of 2 values, range is 2.05 x 10E-7 - 3.87 x 10E-7 lb/ton	170
Asphaltic concrete production	2951	Plant stack	305002	Manganese	7439965	3.02 x 10E-10 lb/ton concrete	Controlled (unspecified) from a single plant, average of 2 values, range is 1.63 x 10E-10 - 4.4 x 10E-10 lb/ton	170
Asphaltic concrete production	2951	Plant stack	305002	Manganese	7439965	5.72 x 10E-9 lb/ton concrete	Uncontrolled from a single plant, average of 2 values, range is 3.3 x 10E-9 - 8.1 x 10E-9 lb/ton	170
Asphaltic concrete production	2951	Plant stack	305002	Mercury	7439976	<1.1 x 10E-9 lb/ton concrete	Controlled (unspecified) from a single plant, average of 2 values, range is 8.8 x 10E-10 - 1.3 x 10E-9	170
Asphaltic concrete production	2951	Plant stack	305002	Mercury	7439976	<2.07 x 10E-9 lb/ton concrete	Uncontrolled from a single plant, average of 2 values, range is 1.5 x 10E-9 - 7.6 x 10E-9	170
Asphaltic concrete production	2951	Plant stack	305002	Nickel	7440020	1.48 x 10E-10 lb/ton concrete	Controlled (unspecified) from a single plant, avg. of 2 values, range is 1.44 x 10E-10 - 1.51 x 10E-10 lb/ton	170
Asphaltic concrete production	2951	Plant stack	305002	Nickel	7440020	7.7 x 10E-10 lb/ton concrete	Uncontrolled from a single plant, avg. of 2 values, range is 6.6 x 10E-10 - 8.8 x 10E-10 lb/ton	170
Asphaltic concrete production	2951	Plant stack	305002	Vanadium	7440622	1.87 x 10E-9 lb/ton concrete	Controlled (unspecified) from a single plant, avg. of 2 values, range is 1.76 x 10E-9 - 1.98 x 10E-9	170
Asphaltic concrete production	2951	Plant stack	305002	Vanadium	7440622	<3.9 x 10E-9 lb/ton concrete	Uncontrolled from a single plant, avg. of 2 values, range is 1.98 x 10E-9 - 5.7 x 10E-9	170
Asphaltic concrete production	2951	Plant stack	305002	Vanadium	7440622	8.00E-7 g/ton concrete	Controlled (unspecified) from a single plant	170
Asphaltic concrete production	2951	Plant stack	305002	Zinc	7440666	5.5 x 10E-10 lb/ton concrete	Controlled (unspecified) from a single plant, avg. of 2 values, range is 4.4 x 10E-10 - 6.6 x 10E-10 lb/ton	170
Asphaltic concrete production	2951	Plant stack	305002	Zinc	7440666	1.98 x 10E-9 lb/ton concrete	Uncontrolled from a single plant, avg. of 2 values, range is 1.76 x 10E-9 - 2.2 x 10E-9 lb/ton	170
Automobile carburetor manufacture	3592	Manual plating cleaning tanks		Sodium hydroxide	1310732	0.03 lb/hr/ft2 tank	Developed by State agency and plant personnel, assume NaOH is 5.7% soln.	158
Automotive products use		End use		Xylenes (mixed isomers)	1330207	2000 lb/ton xylene consumed	Engineering judgement	77
Bagasse combustion	0133	Industrial boilers	10201101	Polycyclic organic matter		179.7 lb/10E12 Btu heat input	2 boilers each w/ multicyclone vented to 1 common stack. Represents both gaseous & particulate POM	114
Bagasse combustion	0133	Industrial boilers	10201101	Polycyclic organic matter		99.9 lb/10E12 Btu heat input	Average of 2 (17.2-68.9), multicyclone, represents both gaseous and particulate POM.	114

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Bakeries	205	Bread baking, processing sponge dough	30203201	Ethyl alcohol	64175	10-16 lb/ton bread	Uncontrolled	97
Bakeries	205	Bread baking, straight dough process	30203202	Ethyl alcohol	64175	1.0 lb/ton bread	Uncontrolled	97
Battery (dry cell) manufacture	369	Ore grinding	304	Manganese	7439965	30 lb/ton of material processed	Uncontrolled, calculated based on engineering judgement	107
Battery (dry cell) manufacture	369	Ore grinding	304	Manganese	7439965	0.03 lb/ton of material processed	Controlled by fabric filter, calculated based on engineering judgement	107
Battery (dry cell) manufacture	369	Screening tower	304	Manganese	7439965	1.0 lb/ton of material processed	Uncontrolled, calculated based on engineering judgement	107
Battery (dry cell) manufacture	369	Screening tower	304	Manganese	7439965	0.001 lb/ton of material processed	Controlled by fabric filter, calculated based on engineering judgement	107
Battery (dry cell) manufacture	369	Storage and handling emissions	304	Manganese	7439965	4.4 lb/ton of material processed	Uncontrolled, calculated based on engineering judgement	107
Battery (dry cell) manufacture	369	Storage and handling emissions	304	Manganese	7439965	0.0044 lb/ton of material processed	Controlled by fabric filter, calculated based on engineering judgement	107
Battery (lead-acid) manufacture	369	Lead oxide production	30400508	Lead	7439921	0.0026 - 0.014 lb/ton lead processed	Controlled with a baghouse, lead acid batteries	204
Battery (lead-acid) manufacture	369	Melting process	304005	Lead	7439921	0.139 lb/ton lead processed	Uncontrolled, based on an engineering estimate, lead acid batteries	204
Battery (lead-acid) manufacture	369	Paste mixing process	30400523	Lead	7439921	1.72 lb/ton of lead throughput	Uncontrolled, lead acid batteries	204
Battery (nickel-cadmium) manufacture	3691	Total plant emissions	304005	Cadmium	7440439	2 lb/ton Cd charged	Survey of companies	38
Battery (nickel-cadmium) manufacture	3691	Total plant emissions	304	Nickel	7440020	8.8 lb/ton of nickel processed	Uncontrolled, based on industry responses to questionnaire survey	110
Battery manufacture	3691	Lead oxide mill - barton process	30400524	Lead	7439921	0.49 lbs/[illegible] of throughput	Controlled by a baghouse, lead oxide plant not batteries, lead acid batteries, range is 0.33 - 0.74 lb/ton	193
Battery manufacture	3691	Lead oxide ball mill	30400508	Lead	7439921	0.0027 lbs/ton of throughput	Controlled by a baghouse, lead acid batteries, range is 0.0021 - 0.0029 lb/ton	193
Battery manufacture	3691	Lead reclamation	30400810	Lead	7439921	0.101 lbs/ton of lead feed	Controlled by cascade scrubber at average efficiency of 98.3%, lead acid batteries, range is 0.064 - 0.142 lb/ton	193
Battery manufacture	3691	Slitting machine and wiser changing	30400509	Lead	7439921	0.459 lbs/1000 batteries produced	Controlled by baghouse at average efficiency of 97.8%, lead acid batteries, range is 0.424 - 0.496 lb/1000	193

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Battery manufacture	3691	Slitting machine and full mixing cycle	30400509	Lead	7439921	0.432 lbs/1000 batteries produced	Controlled by baghouse at average efficiency of 98.1%, lead acid batteries	193
Battery manufacture	3691	Slitting machine	30400509	Lead	7439921	0.24 lbs/1000 batteries produced	Controlled by baghouse at average efficiency of 98.5%, lead acid batteries	193
Battery manufacture	3691	Grid casting and mixing	30400506	Lead	7439921	0.061 lbs/1000 batteries produced	Roto-clone controlled at average efficiency of 89.7%, lead acid batteries, range is 0.038 - 0.084 lb/1000 batteries	193
Battery manufacture	3691	Grid casting and full mixing cycle	30400506	Lead	7439921	0.061 lbs/1000 batteries produced	Roto-clone controlled at average efficiency of 94.2%, lead acid batteries, range is 0.052 - 0.068 lb/1000 batteries	193
Battery manufacture	3691	Grid casting	30400506	Lead	7439921	0.08 lbs/1000 batteries produced	Roto-clone controlled at average efficiency of 94.1%, lead acid batteries	193
Battery manufacture	3691	Three process formation operation	30400504	Lead	7439921	0.313 lbs/1000 batteries produced	Controlled by baghouse with average efficiency of 90.9%, lead acid batteries, range is 0.284 - 0.372 lbs/1000 batteries	193
Battery manufacture	3691	Lead oxide mill	30400508	Lead	7439921	0.009 lbs/ton of lead input	Controlled by baghouse, lead acid batteries, range is 0.007 - 0.014 lbs/ton of lead	193
Battery manufacture	3691	Three process formation operation	30400504	Lead	7439921	0.052 lbs/1000 batteries produced	Controlled by baghouse with average efficiency of 99.3%, lead acid batteries, range is 0.012 - 0.124 lbs/1000 batteries	193
Battery manufacture	3691	Three process formation operation	30400504	Lead	7439921	1.13 lbs/ton of lead throughput	Uncontrolled factor, lead acid batteries	193
Battery manufacture	3691	Paste mixing	30400507	Lead	7439921	1.72 lbs/ton of lead throughput	Uncontrolled factor, lead acid batteries	193
Battery manufacture	3691	Lead reclamation	30400526	Lead	7439921	5.9 lbs/ton of lead throughput	Uncontrolled factor, lead acid batteries	193
Battery manufacture	3691	Grid casting	30400522	Lead	7439921	0.139 lbs/ton of lead throughput	Uncontrolled factor, lead acid batteries	193
Battery manufacture	3691	Lead oxide production	304005	Lead	7439921	0.02 lbs/ton of lead throughput	Uncontrolled factor, lead acid batteries	193
Battery manufacture	3691	Entire process	30400505	Manganese	7439965	8 lb/ton used	Based on engineering estimates	13
Battery manufacture	3691	Entire process	3	Mercury	7439976	1.4 lb/ton Hg used	Control status unspecified, based on emission inventory data for three facilities	111
Beef cattle feed lots	0211	Entire source	30202001	Ammonia	7664417	0.011 lb/day/1000 head capacity	Engineering judgement	97

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INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Beef cattle feed lots	211	Animals & waste	3020201	Ammonia	7664417	13 lbs / animal	Sources emitting > 100 tons NH3/year	179
Beer production	2082	Brewing, bottle washing system	302009	Sodium Hydroxide	1310732	9 lb/hr operation	Uncontrolled, developed by the State of NY and a brewery	158
Benzaldehyde production	2865	Fugitive emissions	301	Toluene	108883	0.4 lb/ton used	Engineering estimate	13
Benzaldehyde production	2865	Process - general	301	Toluene	108883	1.8 lb/ton used	Engineering estimate	13
Benzaldehyde production	2865	Storage	407172	Toluene	108883	0.8 lb/ton used	Engineering estimate	13
Benzene production	2865	General emissions	30125801	Toluene	108883	0.1 lb/ton used	From State air emission files	13
Benzene production	2865	Storage	407036	Toluene	108883	0.2 lb/ton used	From State air emission files	13
Benzene storage tanks	2869	External floating roof tank - total emissions	407	Benzene	71432	0.0881 ton/yr	EF determined for a model benzene tank 140,000 gal vol, 30ft dia, 50turnover/yr. liquid mnt pri seal	202
Benzene storage tanks	2869	External floating roof tank - total emissions	407	Benzene	71432	0.3968 ton/yr	EF determined for a model benzene tank 140,000 gal vol, 30ft dia, 50turnover/yr. liquid mnt pri seal	202
Benzene storage tanks	2869	External floating roof tank - total emissions	407	Benzene	71432	2.546 ton/yr	EF determined for a model benzene tank 140,000 gal vol, 30ft dia, 50turnover/yr. vapor mnt pri seal	202
Benzene storage tanks	2869	External floating roof tank - total emissions	407	Benzene	71432	7.605 ton/yr	EF determined for a model benzene tank 140,000 gal vol, 30ft dia, 50turnover/yr. vapor mntd pri seal	202
Benzene storage tanks	2869	External floating roof tank - total emissions	407	Benzene	71432	0.0959 ton/yr	EF determined for a model benzene tank 140,000 gal vol, 30ft dia, 50turnover/yr. mech shoe seal/rim	202
Benzene storage tanks	2869	External floating roof tank - total emissions	407	Benzene	71432	1.223 ton/yr	EF determined for a model benzene tank 140,000 gal vol, 30ft dia, 50turnover/yr. mech shoe seal	202
Benzene storage tanks	2869	Internal floating roof tank - total emissions	407	Benzene	71432	0.264 ton/yr	EF determined for a model benzene tank 140,000 gal vol, 30ft dia, 50turnover/yr. welded deck/lig mnt	202
Benzene storage tanks	2869	Internal floating roof tank - total emissions	407	Benzene	71432	0.3306 ton/yr	EF determined for a model benzene tank 140,000 gal vol, 30ft dia, 50turnover/yr. bolted deck/lig mnt	202
Benzene storage tanks	2869	Internal floating roof tank - total emissions	407	Benzene	71432	0.374 - 0.495 ton/yr	EF determined for a model benzene tank 140,000 gal vol, 30ft dia, 50turnover/yr. bolted deck/lig mnt	202
Benzene storage tanks	2869	Internal floating roof tank - total emissions	407	Benzene	71432	0.595 ton/yr	EF determined for a model benzene tank 140,000 gal vol, 30ft dia, 50turnover/yr. bolted deck/vap mnt	202
Benzene storage tanks	2869	Fixed roof tank - total emissions	407	Benzene	71432	10.141 ton/yr	EF determined for a model benzene tank 140,000 gal vol, 30ft dia, 50turnover/yr.	202
Benzoic acid production	2865	Fugitive emissions	301	Toluene	108883	0.2 lb/ton used	Engineering estimate	13
Benzoic acid production	2865	Process - general	301	Toluene	108883	2.0 lb/ton used	Engineering estimate	13

EMISSIONS

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Benzoic acid production	2865	Storage	407040	Toluene	108883	0.88 lb/ton used	Engineering estimate	13
Benzyl chloride production	2865	Fugitive emissions	301	Toluene	108883	0.3 lb/ton used	Engineering estimate	13
Benzyl chloride production	2865	Process - general	301	Toluene	108883	1.10 lb/ton used	Engineering estimate	13
Benzyl chloride production	2865	Storage	407040	Toluene	108883	0.6 lb/ton used	Engineering estimate	13
Beryl ore mining	1099	Entire process	309	Beryllium	7440417	0.2 lb/ton ore mined	Engineering Judgement	113
Beryllium alloy - production	34	Melting	303	Beryllium	7440417	0.01 lb/ton alloy produced	Uncontrolled	113
Beryllium alloy - production	34	Melting	303	Beryllium	7440417	0.0004 lb/ton alloy produced	Baghouse	113
Beryllium alloy - stamping/drawing	34	Entire process	303	Beryllium	7440417	0.1 lb/ton Be processed	Engineering Judgement	113
Beryllium metal fabrication	347	Entire process	309	Beryllium	7440417	0.1 lb/ton Be processed	Engineering Judgement, controlled	113
Bisphenol A production	2869	Fugitive emissions	301152	Phenol	108952	0.24 lb/ton used	From engineering estimates	13
Bisphenol A production	2869	General emissions	30115201	Phenol	108952	0.7 lb/ton used	From engineering estimates	13
Bisphenol A production	2869	Storage	407	Phenol	108952	0.06 lb/ton used	From engineering estimates	13
Brick manufacture	3251	Kiln	305003	Fluoride	16984488	1 lb/ton brick produced	Uncontrolled, applies to tunnel or periodic kiln, gas, oil, or coal fired	97
Butadiene catrimer production	2869	Process vents		1,3-Butadiene	106990	440 lb/ton BFC produced	Controlled (unspecified), and uncontrolled, based on one plant's data	166
Butadiene production - recovery process	2869	Equipment leak	30115380	1,3-Butadiene	106990	2.4 lb/ton produced	Calculated from national emissions and capacities, average of uncontrolled and controlled plants	79
Butadiene production - recovery process	2869	Process vents	301153	1,3-Butadiene	106990	0.2 lb/ton produced	Calculated from national emissions and capacities, average of uncontrolled and controlled plants	79
Butadiene production - recovery process	2869	Wastewater emissions	301153	1,3-Butadiene	106990	0.4 lb/ton produced	Calculated from national emissions and capacities, average of uncontrolled and controlled plants	79
Butadiene-vinylpyridine latex production	282	Equipment leak		1,3-Butadiene	106990	0.61 tons/yr	Controlled (unspecified) based on one plant's data	166
CCl4 and perchloroethylene production - propane chlorination	2869	Dryer	30130201	Chlorine	7782505	20.00 lb/ton produced	Control uncertain, based on tests and mass balance	95

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
CCl4 and perchloroethylene production - propane chlorination	2869	Hydrocarbon chlorinolysis process, hex waste handling	301125	Vinylidene chloride	75354	0.026 lb/ton PCE & carbon tet. produced	Uncontrolled, based on hypothetical plant producing 1.1 x 10E8 lb/yr PCE and 6.6 x 10E7 lb/yr CT	70
CCl4 and perchloroethylene production - propane chlorination	2869	Hydrocarbon chlorinolysis process, hex waste handling	301125	Vinylidene chloride	75354	0.00026 lb/ton PCE & carbon tet. produce	Vapor-bal.evst./carb.adsor.(99% eff), hypothet. plant prod. 1.1x10E8 lb/yr PCE & 6.6x10E7 lb/yr CCl4	70
CCl4 production - CS2 chlorination	2869	Separation unit	30130201	Carbon disulfide	75150	4 lb/ton produced	Control uncertain, based on tests and mass balance	95
CCl4 production - CS2 chlorination	2869	Chlorinator	30130201	Carbon tetrachloride	56235	232 lb/ton CCl4 produced	Uncontrolled	163
CCl4 production - CS2 chlorination	2869	Chlorinator	30130201	Carbon tetrachloride	56235	11.6 lb/ton CCl4 produced	Refrigerated condenser	163
CCl4 production - CS2 chlorination	2869	Loading tank cars, barges, trucks, etc.	301302	Carbon tetrachloride	56235	0.48 lb/ton CCl4 produced	Uncontrolled	163
CCl4 production - CS2 chlorination	2869	Loading tank cars, barges, trucks, etc.	301302	Carbon tetrachloride	56235	0.072 lb/ton CCl4 produced	Refrigerated condenser	163
CCl4 production - CS2 chlorination	2869	Process fugitive emissions	30130280	Carbon tetrachloride	56235	1.2 lb/ton CCl4 produced	Uncontrolled	163
CCl4 production - CS2 chlorination	2869	Process fugitive emissions	30130280	Carbon tetrachloride	56235	0.44 lb/ton CCl4 produced	Quarterly I/M pumps and valves	163
CCl4 production - CS2 chlorination	2869	Process fugitive emissions	30130280	Carbon tetrachloride	56235	0.44 lb/ton CCl4 produced	Monthly I/M pumps and valves	163
CCl4 production - CS2 chlorination	2869	Process fugitive emissions	30130280	Carbon tetrachloride	56235	0.28 lb/ton CCl4 produced	Monthly I/M valves, double mechanical seals on pumps, rupture disks on relief valves	163
CCl4 production - CS2 chlorination	2869	Storage	407060	Carbon tetrachloride	56235	1.52 lb/ton CCl4 produced	Uncontrolled	163
CCl4 production - CS2 chlorination	2869	Storage	407060	Carbon tetrachloride	56235	0.22 lb/ton CCl4 produced	Refrigerated condenser	163
CCl4 production - CS2 chlorination	2869	Separation unit	30130201	Chlorine	7782505	0.0003 lb/ton produced	Control uncertain, based on tests and mass balance	95
CCl4 production - CS2 chlorination	2869	Separation unit	30130201	Sulfur chloride	10025679	2.0 lb/ton produced	Control uncertain, based on tests and mass balance	95
CCl4 production - hydrocarbon chlorinolysis	2869	Carbon tetrachloride tank	407060	Carbon tetrachloride	56235	1.16 lb/ton CCl4 produced	Uncontrolled	163

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
CCl4 production - hydrocarbon chlorinolysis	2869	Carbon tetrachloride tank	407040	Carbon tetrachloride	56235	0.174 lb/ton CCl4 produced	Refrigerated condenser	163
CCl4 production - hydrocarbon chlorinolysis	2869	Crude tank (storage)	407040	Carbon tetrachloride	56235	0.196 lb/ton CCl4 produced	Uncontrolled	163
CCl4 production - hydrocarbon chlorinolysis	2869	Crude tank (storage)	407040	Carbon tetrachloride	56235	0.026 lb/ton CCl4 produced	Refrigerated condenser	163
CCl4 production - hydrocarbon chlorinolysis	2869	Day tanks	407040	Carbon tetrachloride	56235	0.9 lb/ton CCl4 produced	Uncontrolled, value for two tanks	163
CCl4 production - hydrocarbon chlorinolysis	2869	Day tanks	407040	Carbon tetrachloride	56235	0.064 lb/ton CCl4 produced	Refrigerated condenser, value for two tanks	163
CCl4 production - hydrocarbon chlorinolysis	2869	Distillation column	30130202	Carbon tetrachloride	56235	0.016 lb/ton CCl4 produced	Uncontrolled	163
CCl4 production - hydrocarbon chlorinolysis	2869	Hex waste handling, disposal	503007	Carbon tetrachloride	56235	0.0092 lb/ton CCl4 produced	Uncontrolled	163
CCl4 production - hydrocarbon chlorinolysis	2869	Hex waste handling, disposal	503007	Carbon tetrachloride	56235	9.2 x 10E-5 lb/ton CCl4 produced	Vapor balance and refrigerated condenser	163
CCl4 production - hydrocarbon chlorinolysis	2869	Loading barges, tanks	301302	Carbon tetrachloride	56235	0.48 lb/ton CCl4 produced	Uncontrolled	163
CCl4 production - hydrocarbon chlorinolysis	2869	Loading barges, tanks	301302	Carbon tetrachloride	56235	0.072 lb/ton CCl4 produced	Refrigerated condensers	163
CCl4 production - hydrocarbon chlorinolysis	2869	Process fugitive emissions	30130280	Carbon tetrachloride	56235	3.31 lb/hr	Uncontrolled	163
CCl4 production - hydrocarbon chlorinolysis	2869	Process fugitive emissions	30130280	Carbon tetrachloride	56235	1.19 lb/hr	Monthly I/M pumps and valves	163
CCl4 production - hydrocarbon chlorinolysis	2869	Process fugitive emissions	30130280	Carbon tetrachloride	56235	1.72 lb/hr	Quarterly I/M pumps and valves	163
CCl4 production - hydrocarbon chlorinolysis	2869	Process fugitive emissions	30130280	Carbon tetrachloride	56235	0.90 lb/hr	Monthly I/M valves, double mechanical seals on pumps, rupture disks on relief valves	163
CCl4 production - hydrocarbon chlorinolysis	2869	Waste caustic	503007	Carbon tetrachloride	56235	0.0058 lb/ton CCl4 produced	Uncontrolled	163
CCl4 production - hydrocarbon chlorinolysis	2869	Waste caustic	503007	Carbon tetrachloride	56235	2.4 x 10E-4 lb/ton CCl4 produced	Steam stripper	163
CCl4 production - methane chlorination	2869	Crude tank (storage)	407040	Carbon tetrachloride	56235	0.114 lb/ton CCl4 produced	Uncontrolled	163

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INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
CCl4 production - methane chlorination	2869	Crude tank (storage)	407060	Carbon tetrachloride	56235	0.0092 lb/ton CCl4 produced	Refrigerated condenser	163
CCl4 production - methane chlorination	2869	Day tanks	407060	Carbon tetrachloride	56235	0.72 lb/ton CCl4 produced	Uncontrolled, value is for two tanks	163
CCl4 production - methane chlorination	2869	Day tanks	407060	Carbon tetrachloride	56235	0.05 lb/ton CCl4 produced	Refrigerated condenser, value is for two tanks	163
CCl4 production - methane chlorination	2869	Distillation area emergency inert gas vent	301129	Carbon tetrachloride	56235	0.104 lb/ton CCl4 produced	Uncontrolled	163
CCl4 production - methane chlorination	2869	Loading tank cars, barges	408	Carbon tetrachloride	56235	0.48 lb/ton CCl4 produced	Uncontrolled	163
CCl4 production - methane chlorination	2869	Loading tank cars, barges	408	Carbon tetrachloride	56235	0.072 lb/ton CCl4 produced	Refrigerated condenser	163
CCl4 production - methane chlorination	2869	Process fugitive emissions	30112914	Carbon tetrachloride	56235	3.44 lb/hr	Uncontrolled	163
CCl4 production - methane chlorination	2869	Process fugitive emissions	30112914	Carbon tetrachloride	56235	3.92 lb/hr	Quarterly I/M pumps and valves	163
CCl4 production - methane chlorination	2869	Process fugitive emissions	30112914	Carbon tetrachloride	56235	2.42 lb/hr	Monthly I/M pumps and valves	163
CCl4 production - methane chlorination	2869	Process fugitive emissions	30112914	Carbon tetrachloride	56235	1.63 lb/hr	Monthly I/M valves, double mechanical seals on pumps, rupture disks on relief valves	163
CCl4 production - methane chlorination	2869	Process waste liquids - handling and disposal	50300701	Carbon tetrachloride	56235	0.036 lb/ton CCl4 produced	Uncontrolled	163
CCl4 production - methane chlorination	2869	Product storage tank vents	407060	Carbon tetrachloride	56235	1.28 lb/ton CCl4 produced	Uncontrolled	163
CCl4 production - methane chlorination	2869	Product storage tank vents	407060	Carbon tetrachloride	56235	0.192 lb/ton CCl4 produced	Refrigerated condenser	163
CCl4 production - methane chlorination	2869	Recycled methane inert gas purge vent	30112911	Carbon tetrachloride	56235	<0.004 lb/ton CCl4 produced	Uncontrolled	163
CCl4 production - methanol/methyl chloride chlorination	2869	Carbon tetrachloride tank	407060	Carbon tetrachloride	56235	2.78 lb/ton CCl4 produced	Uncontrolled	163
CCl4 production - methanol/methyl chloride chlorination	2869	Carbon tetrachloride tank	407060	Carbon tetrachloride	56235	0.42 lb/ton CCl4 produced	Refrigerated condenser	163
CCl4 production - methanol/methyl chloride chlorination	2869	Crude tank (storage)	407060	Carbon tetrachloride	56235	0.08 lb/ton CCl4 produced	Uncontrolled	163

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
CCl4 production - methanol/methyl chloride chlorination	2869	Crude tank (storage)	407060	Carbon tetrachloride	56235	0.0024 lb/ton CCl4 produced	Refrigerated condenser	163
CCl4 production - methanol/methyl chloride chlorination	2869	Loading tank cars, barges, trucks, etc.	301302	Carbon tetrachloride	56235	1.04 lb/ton CCl4 produced	Uncontrolled	163
CCl4 production - methanol/methyl chloride chlorination	2869	Loading tank cars, barges, trucks, etc.	301302	Carbon tetrachloride	56235	0.156 lb/ton CCl4 produced	Refrigerated condenser	163
CCl4 production - methanol/methyl chloride chlorination	2869	Process fugitive emissions	30130280	Carbon tetrachloride	56235	1.04 lb/hr	Uncontrolled	163
CCl4 production - methanol/methyl chloride chlorination	2869	Process fugitive emissions	30130280	Carbon tetrachloride	56235	0.42 lb/hr	Quarterly I/M pumps and valves	163
CCl4 production - methanol/methyl chloride chlorination	2869	Process fugitive emissions	30130280	Carbon tetrachloride	56235	0.42 lb/hr	Monthly I/M pumps and valves	163
CCl4 production - methanol/methyl chloride chlorination	2869	Process fugitive emissions	30130280	Carbon tetrachloride	56235	0.2 lb/hr	Monthly I/M valves, double mechanical seals on pumps, rupture disks on relief valves	163
CCl4 production - methanol/methyl chloride chlorination	2869	Surge tank	407060	Carbon tetrachloride	56235	0.114 lb/ton CCl4 produced	Uncontrolled	163
CCl4 production - methanol/methyl chloride chlorination	2869	Surge tank	407060	Carbon tetrachloride	56235	0.0046 lb/ton CCl4 produced	Refrigerated condenser	163
Cadmium electroplating	3471	Entire process		Cadmium	7440439	0.00005 g/hr/sq	Uncontrolled, assumed	92
Cadmium pigments manufacture	2816	Total plant emissions	301075	Cadmium	7440439	15 lb/ton Cd charged	Engineering estimate, mass balance, controlled with baghouse	78
Caprolactam production	2869	Cyclohexanone purification	30121002	Benzene	71432	0.032 lb/ton caprolactam produced	Controlled, condenser 90% eff model plant	145
Caprolactam production	2869	Neutralization reactor	30121005	Benzene	71432	0.0026 lb/ton caprolactam produced	Controlled, condenser 70% eff model plant	145
Caprolactam production	2869	Phase separation, solvent recovery, and stripping	30121005	Benzene	71432	0.042 lb/ton caprolactam produced	Controlled, condenser 90% eff model plant	145
Caprolactam production	2869	Fugitive emissions	30121090	Phenol	[illegible]	0.36 lb/ton used	Data from site visit	13

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Caprolactam production	2869	General emissions	30121001	Phenol	108952	2.6 lb/ton used	Data from site visit	13
Caprolactam production	2869	Storage	407040	Phenol	108952	0.02 lb/ton used	Data from site visit	13
Carbon black manufacture	2895	Product recovery baghouse on main process vent	30100504	Polycyclic organic matter		0.0038 lb/ton carbon black produced	Uncontrolled, average of 3 tests, both gaseous and particulate POM	114
Carbon black manufacture - oil furnace	2895	Main process purge vent	30100504	Acetylene	74862	90 lb/ton carbon black produced	Range of 10-120 lb/ton based on survey of operating plants	97
Carbon black manufacture - oil furnace	2895	Main process purge vent	30100504	Butane	106978	0.94 lb/ton carbon black produced	Based on test data	97
Carbon black manufacture - oil furnace	2895	Main process purge vent	30100504	Carbon disulfide	75150	40 lb/ton carbon black produced	Based on test data	97
Carbon black manufacture - oil furnace	2895	Main process purge vent	30100504	Carbonyl sulfide	463581	20 lb/ton carbon black produced	Based on test data	97
Carbon black manufacture - oil furnace	2895	Main process purge vent	30100504	Copper	7440508	0.002 lb/ton carbon black produced	Uncontrolled, copper content 0.45%, total trace elements 0.80 lb/ton	53,97
Carbon black manufacture - oil furnace	2895	Main process purge vent	30100504	Ethylene	74851	3.2 lb/ton carbon black produced	Based on test data	97
Carbon black manufacture - oil furnace	2895	CO boiler/incinerator	301005	Hydrogen sulfide	7783064	0.22 lb/ton carbon black produced	Based on test data	97
Carbon black manufacture - oil furnace	2895	Flare	301005	Hydrogen sulfide	7783064	2 lb/ton	Based on test data	97
Carbon black manufacture - oil furnace	2895	Main process purge vent	30100504	Hydrogen sulfide	7783064	40 lb/ton carbon black produced	Based on test data	97
Carbon black manufacture - oil furnace	2895	Main process purge vent	30100504	2-Methylpropane	75285	0.20 lb/ton carbon black produced	Based on test data	97
Carbon black manufacture - oil furnace	2895	Main process purge vent	30100504	Propane	74986	0.46 lb/ton carbon black produced	Based on test data	97
Cast iron production	3312		303504	Arsenic	7440382	0.014 lb/ton of metal charged		3
Catalyst manufacture	2819	Entire process	301	Vanadium	7440622	20 lb/ton of vanadium processed	Control status unspecified, based on information obtained from industrial sources	96
Cement kiln cofiring waste	3241	Stack - flue gas	309006	Polychlorinated dibenzofurans, total		Not detectable - 2.09 ng/m3	3 loc., liquid waste fuel contain. chlor. comp., detect. limits range 1.4-4.9 ng/m3 or 1 ng/ul inj.	119
Cement kiln cofiring waste	3241	Stack - flue gas	309006	Polychlorinated dibenzo-p-dioxins, total		Not detectable	3 loc., liquid waste fuel contain. chlor. comp., detect. limits range 1.4-4.9 ng/m3 or 1 ng/ul inj.	119

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Cement manufacture	3241	Clinker cooler	305	Manganese	7439965	5 x 10E-6 - 6.1 x 10E-5 lb/ton cement	Controlled by fabric filter, calculated based on engineering judgement	107
Cement manufacture	3241	Clinker cooler	305	Manganese	7439965	2.3 x 10E-5 - 4.5 x 10E-5 lb/ton cement	Controlled by gravel bed, calculated based on engineering judgement	107
Cement manufacture	3241	Clinker cooler	305	Manganese	7439965	2.2 x 10E-5 lb/ton cement produced	Controlled by wet scrubber, calculated based on engineering judgement	107
Cement manufacture - dry process	3241	Entire process	305006	Beryllium	7440417	3 x 10E-8 lb/ton produced	Engineering judgement	113
Cement manufacture - dry process	3241	Finish mill	305006	Cadmium	7440439	1 x 10E-7 lb/ton feed	Controlled with baghouse	38
Cement manufacture - dry process	3241	Finish mill air separator	305006	Cadmium	7440439	2.6 x 10E-6 lb/ton feed	Controlled with baghouse, stack sampling	38
Cement manufacture - dry process	3241	Finish mill feed	305006	Cadmium	7440439	1 x 10E-6 lb/ton feed	Controlled with baghouse	38
Cement manufacture - dry process	3241	Kiln	30500606	Cadmium	7440439	3 x 10E-4 lb/ton feed	Controlled with a baghouse or ESP, stack sampling	38
Cement manufacture - dry process	3241	Raw mill	305006	Cadmium	7440439	2.7 x 10E-7 lb/ton feed	Controlled with baghouse	38
Cement manufacture - dry process	3241	Raw mill air separator	305006	Cadmium	7440439	8.9 x 10E-7 lb/ton feed	Controlled with baghouse	38
Cement manufacture - dry process	3241	Raw mill feed	305006	Cadmium	7440439	3.6 x 10E-7 lb/ton feed	Controlled with baghouse	38
Cement manufacture - dry process	3241	Dryer/grinder	30500613	Chromium	7440473	0.01 lb/ton cement produced	Uncontrolled, includes fuel emissions, as total chromium	141
Cement manufacture - dry process	3241	Kiln	30500606	Chromium	7440473	0.026 lb/ton cement produced	Includes fuel emissions, as total chromium, uncontrolled	141
Cement manufacture - dry process	3241	Kiln	30500606	Chromium	7440473	1.2 x 10E-5 lb/ton cement produced	Includes fuel emissions, as total chromium, ESP	141
Cement manufacture - dry process	3241	Kiln	30500606	Chromium	7440473	1.0 x 10E-5 lb/ton cement produced	Includes fuel emissions, as total chromium, fabric filter	141
Cement manufacture - dry process	3241	Dryer/grinder	30500613	Manganese	7439965	0.048 lb/ton cement produced	Uncontrolled, calculated based on engineering judgement	107
Cement manufacture - dry process	3241	Kiln	30500606	Manganese	7439965	0.122 lb/ton cement produced	Uncontrolled, calculated based on engineering judgement	107

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Cement manufacture - dry process	3241	Kiln	30500606	Manganese	7439965	2.1 x 10E-5 - 1.25 x 10E-4 lb/ton cement	Controlled by ESP, calculated based on engineering judgement	107
Cement manufacture - dry process	3241	Kiln	30500606	Manganese	7439965	1.3 x 10E-5 - 1.24 x 10E-4 lb/ton cement	Controlled by fabric filter, calculated based on engineering judgement	107
Cement manufacture - dry process	3241	Air separator after finish grinding mill	305006	Nickel	7440020	6 x 10E-6 lb/ton raw mater. feed input	Controlled by fabric filter, based on source tests	110
Cement manufacture - dry process	3241	Air separator after initial grinding mill	305006	Nickel	7440020	1 x 10E-6 lb/ton raw mater. feed input	Controlled by fabric filter, based on source tests	110
Cement manufacture - dry process	3241	Feed to finish grinding mill	305006	Nickel	7440020	1 x 10E-5 lb/ton raw mater. feed input	Controlled by fabric filter, based on source tests	110
Cement manufacture - dry process	3241	Feed to initial grinding mill	305006	Nickel	7440020	1 x 10E-5 lb/ton raw mater. feed input	Controlled by fabric filter, based on source tests	110
Cement manufacture - dry process	3241	Kiln	30500606	Nickel	7440020	3 x 10E-4 lb/ton raw mater. feed input	Controlled by fabric filter, based on source tests	110
Cement manufacture - dry process	3241	Raw material grinding mills	30500613	Nickel	7440020	6 x 10E-7 lb/ton raw mater. feed input	Controlled by fabric filter, based on source tests	110
Cement manufacture - wet process	3241	Clinker cooler	30500714	Beryllium	7440417	0.0008 lb/ton produced	ESP control	113
Cement manufacture - wet process	3241	Clinker cooler	30500714	Beryllium	7440417	0.0009 lb/ton produced	Baghouse control	113
Cement manufacture - wet process	3241	Kiln	30500706	Beryllium	7440417	0.002 lb/ton produced	Engineering judgement	113
Cement manufacture - wet process	3241	Clinker cooler	305006	Cadmium	7440439	1 x 10E-5 lb/ton feed	Controlled with ESP or baghouse	58
Cement manufacture - wet process	3241	Kiln	305006	Cadmium	7440439	2 x 10E-5 lb/ton feed	Controlled with ESP	58
Cement manufacture - wet process	3241	Raw mill	305006	Cadmium	7440439	2 x 10E-5 lb/ton feed	Controlled with baghouse	58
Cement manufacture - wet process	3241	Clinker cooler	30500714	Chromium	7440473	8 x 10E-6 lb/ton cement produced	Fabric filter, includes fuel, as total chromium	141
Cement manufacture - wet process	3241	Clinker cooler	30500714	Chromium	7440473	8 x 10E-6 lb/ton cement produced	Gravel bed, includes fuel, as total chromium	141
Cement manufacture - wet process	3241	Clinker cooler	30500714	Chromium	7440473	4 x 10E-6 lb/ton cement produced	Wet scrubber, includes fuel, as total chromium	141

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Cement manufacture - wet process	3241	Dryer/grinder	30500717	Chromium	7440473	0.0034 lb/ton cement produced	Uncontrolled, includes fuel emissions, as total chromium	161
Cement manufacture - wet process	3241	Kiln	30500706	Chromium	7440473	0.024 lb/ton cement produced	Uncontrolled, includes fuel emissions, as total chromium	161
Cement manufacture - wet process	3241	Kiln	30500706	Chromium	7440473	2.2 10E-5 lb/ton cement produced	ESP, includes fuel emissions, as total chromium	161
Cement manufacture - wet process	3241	Kiln	30500706	Chromium	7440473	1.4 x 10E-5 lb/ton cement produced	Fabric filter, includes fuel emissions, as total chromium	161
Cement manufacture - wet process	3241	Dryer/grinder	305007	Manganese	7439965	0.016 lb/ton cement produced	Uncontrolled, calculated based on engineering judgement	107
Cement manufacture - wet process	3241	Kiln	30500706	Manganese	7439965	0.114 lb/ton cement produced	Uncontrolled, calculated based on engineering judgement	107
Cement manufacture - wet process	3241	Kiln	30500706	Manganese	7439965	3 x 10E-5 - 1.42 x 10E-4 lb/ton cement	Controlled by ESP, calculated based on engineering judgement	107
Cement manufacture - wet process	3241	Kiln	30500706	Manganese	7439965	4.9 x 10E-5 - 1.32 x 10E-4 lb/ton cement	Controlled by fabric filter, calculated based on engineering judgement	107
Cement manufacture - wet process	3241	Clinker cooler	30500714	Nickel	7440020	4 x 10E-6 lb/ton raw mater. feed input	Controlled by fabric filter, based on source tests	110
Cement manufacture - wet process	3241	Clinker cooler	30500714	Nickel	7440020	1 x 10E-4 lb/ton raw mater. feed input	Controlled by ESP, based on source tests	110
Cement manufacture - wet process	3241	Clinker cooler	30500714	Nickel	7440020	2 x 10E-4 lb/ton raw mater. feed input	Controlled by two fabric filters in parallel, based on source tests	110
Cement manufacture - wet process	3241	Finishing grinding mill after air separator	30500717	Nickel	7440020	4 x 10E-6 lb/ton raw mater. feed input	Controlled by fabric filter, based on source tests	110
Cement manufacture - wet process	3241	Kiln	30500706	Nickel	7440020	0.0002-0.002 lb/ton raw mater. feed	Controlled by fabric filter, based on source tests	110
Ceramics	36	Entire process		Beryllium	7440417	1 lb/ton Be processed	Engineering judgement, controlled	113
Chain saw exhausts		Chain saw		Polycyclic organic matter		75 ug/m3	Measured during laboratory tests	114
Chain saw exhausts		Chain saw		Polycyclic organic matter		31 ug/m3	Average of range of values measured in field use (19-42 ug/m3)	114
Charcoal manufacture	2861	Batch kiln	30100403	Acetic acid	64197	32 lb/ton charcoal	Controlled, afterburner, engineering judgement	124
Charcoal manufacture	2861	Continuous furnace	30100404	Acetic acid	64197	11 lb/ton charcoal	Controlled, afterburner, engineering judgement	124
Charcoal manufacture	2861	Overall process	30100451	Acetic acid	64197	218 lb/ton charcoal	Uncontrolled, range of 204-232 lb/ton, engineering judgement	124

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Charcoal manufacture	2861	Batch kiln	30100603	Methanol	67561	22 lb/ton charcoal	Controlled, afterburner, engineering judgement	124
Charcoal manufacture	2861	Continuous furnace	30100604	Methanol	67561	7.4 lb/ton charcoal	Controlled, afterburner, engineering judgement	124
Charcoal manufacture	2861	Overall process	30100601	Methanol	67561	144 lb/ton charcoal manufactured	Uncontrolled, range of 134-152 lb/ton, engineering judgement	124
Charcoal manufacture	2861	Missouri-type batch kiln	30100603	Polycyclic organic matter		0.007 lb/ton charcoal produced	Uncontrolled, average of 5 tests	114
Chemical applications	2819	Entire process	301	Manganese	7439965	0 lb/ton used	Based on engineering estimates	13
Chemical distribution facilities	5169	Handling emissions (filling losses)	4	Methylene chloride	75092	1.8 lb/ton MC distributed	Partially controlled, based on nationwide emiss. & distribution estim. for dist. facilities in 1983	69
Chemical distribution facilities	5169	Storage tank emissions	4	Methylene chloride	75092	2 lb/ton MC distributed	Uncontrolled, based on nationwide emissions and distribution estimates for distr. facilities in 1983	69
Chemical distribution facilities	5169	Handling emissions (filling losses)	4	Tetrachloroethylene	127184	0.2 lb/ton PCE distributed	Assumes partially controlled, based on nationwide emis. & distrib. est. for dist. fac. in 1983	68
Chemical distribution facilities	5169	Storage tank emissions	4	Tetrachloroethylene	127184	0.4 lb/ton PCE distributed	Assumes storage tanks uncontrolled, based on nationwide emis. & distrib. est. for dist. fac. in 1983	68
Chemical distribution facilities	5169	Storage and handling emissions	4	Trichloroethylene	79016	1.2 lb/ton TCE handled	Stor. tanks uncont. & loading emis. part. control., based on aggregate TCE emis. for dist. fac./1983	105
Chlorine production (chlor-alkali)	2812	Absorber process vent tail gas scrubbing	301008	Carbon tetrachloride	56235	1.1 lb/ton chlorine production capacity	Uncontrolled, not all plants use CCl4	134
Chlorine production (chlor-alkali)	2812	Fugitives/tail gas scrubbing	301008	Carbon tetrachloride	56235	76 lb/ton chlorine productuion capacity	Uncontrolled, calculated by total emission/total capacity of plants that use CCl4	134
Chlorine production (chlor-alkali)	2812	Nitrogen trichloride diluent	301008	Carbon tetrachloride	56235	3.2 lb/ton CCl4 used	Uncontrolled, not all plants use CCl4 in this way	134
Chlorine production (chlor-alkali)	2812	Air blowing mercury cell brine	30100605	Chlorine	7782505	500 lb/100 tons	Engineering judgement and test data	97
Chlorine production (chlor-alkali)	2812	Air blowing of brine	30100605	Chlorine	7782505	94 lb/100 ton Cl produced	Mercury-cell plants, no control	29
Chlorine production (chlor-alkali)	2812	Cell gas condensate	301008	Chlorine	7782505	400-1200 lb/100 ton Cl liquified	No control	29
Chlorine production (chlor-alkali)	2812	Diaphrem cell process, liquefaction blow gases	30100601	Chlorine	7782505	10,000 lb/100 tons produced	Range of 2,000-10,000 lb/100 tons	97
Chlorine production (chlor-alkali)	2812	Liquefaction blow gases	301008	Chlorine	7782505	2,000-16,000 lb/100 ton Cl liquified	No control	29

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Chlorine production (chlor-alkali)	2812	Liquefaction blow gases	301008	Chlorine	7782505	25-1090 lb/100 ton Cl liquified	Controlled with water absorber	25
Chlorine production (chlor-alkali)	2812	Liquefaction blow gases	301008	Chlorine	7782505	1 lb/100 ton Cl liquefied	Controlled with caustic or lime scrubber	25
Chlorine production (chlor-alkali)	2812	Loading chlorine/storage tank vents	30100804	Chlorine	7782505	1200 lb/100 tons	Engineering judgement and test data	97
Chlorine production (chlor-alkali)	2812	Loading chlorine/tank car vents	30100803	Chlorine	7782505	450 lb/100 tons	Engineering judgement and test data	97
Chlorine production (chlor-alkali)	2812	Mercury cell process, liquefaction blow gases	30100802	Chlorine	7782505	14,000 lb/100 tons produced	Range of 4,000-14,000 lb/100 tons	97
Chlorine production (chlor-alkali)	2812	Tank car loading venting	30100803	Chlorine	7782505	0-100.8 lb/100 ton Cl liquified	Controlled with scrubber	25
Chlorine production (chlor-alkali)	2812	Mercury cell process, cell room ventilation, fan ventilation (one fan)	301008	Mercury	7439976	0.06 lb/100 ton Cl2 produced	Uncontrolled, based on source tests	113
Chlorine production (chlor-alkali)	2812	Mercury cell process, cell room ventilation, ridge vent	301008	Mercury	7439976	0.4 lb/100 ton Cl2 produced	Uncontrolled, based on source tests	113
Chlorine production (chlor-alkali)	2812	Mercury cell process, end-box ventilation	301008	Mercury	7439976	1 lb/100 ton Cl2 produced	Uncontrolled, based on source tests	113
Chlorine production (chlor-alkali)	2812	Mercury cell process, hydrogen stream losses	301008	Mercury	7439976	2 lb/100 ton Cl2 produced	Uncontrolled, based on material balance	113
Chlorine production (chlor-alkali)	2812	Mercury cell process, hydrogen stream losses	301008	Mercury	7439976	0.2 to 1 lb/100 on Cl2 produced	Uncontrolled, based on source tests	113
Chlorine production (chlor-alkali)	2812	Mercury cell process, hydrogen stream losses	301008	Mercury	7439976	0.1 lb/100 ton Cl2 produced	Controlled by carbon adsorber, based on source tests	113
Chlorine production (chlor-alkali)	2812	Mercury cell process, ventilation losses	301008	Mercury	7439976	4 lb/100 ton Cl2 produced	Uncontrolled, based on material balance	113
Chlorine production (chlor-alkali)	2812	End-box ventilation stream		Mercury	7439976	1.02 x 10E-5 - 1.21 x 10E-2 lb/ton	Range of controlled factors for a combination of 18 different controls	148
Chlorine production (chlor-alkali)	2812	Hydrogen stream		Mercury	7439976	6.79 x 10E-6 - 6.75 x 10E-3 lb/ton	Range of controlled factors for a combination of 18 different controls	148
Chlorobenzene prod. (mono- & di-), direct chlorination	2869	Absorption	30112539	Benzene	71432	0.004 lb/ton produced	Control uncertain, based on tests and mass balance	95

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Chlorobenzene prod. (mono- & di-), direct chlorination	2869	Absorption	30112535	Chlorobenzene	108907	0.06 lb/ton produced	Control uncertain, based on tests and mass balance	95
Chlorobenzene prod. (mono- & di-), direct chlorination	2869	Absorption	30112535	Dichlorobenzene (mixed isomers)	25321226	0.002 lb/ton produced	Control uncertain, based on tests and mass balance	95
Chlorobenzene prod. (mono- & di-), direct chlorination	2869	Absorption	30112535	Hydrogen chloride	7647010	0.12 lb/ton produced	Control uncertain, based on tests and mass balance	95
Chlorobenzene production	2869	Atmospheric distillation vents	3013010	Benzene	71432	0.44 lb/ton chlorobenzene produced	Uncontrolled	132
Chlorobenzene production	2869	Atmospheric distillation vents	3013010	Benzene	71432	0.0084 lb/ton chlorobenzene produced	Controlled, carbon adsorption, 98.7% efficiency	132
Chlorobenzene production	2869	Benzene storage	407036	Benzene	71432	0.82 lb/ton chlorobenzene	Uncontrolled	132
Chlorobenzene production	2869	Benzene storage	407	Benzene	71432	0.12 lb/ton chlorobenzene	Controlled, internal floating roof, 85% efficiency	132
Chlorobenzene production	2869	Fugitive emissions	3017u180	Benzene	71432	1.14 lb/ton chlorobenzene	Uncontrolled	132
Chlorobenzene production	2869	Fugitive emissions	30130180	Benzene	71432	0.32 lb/ton chlorobenzene	Controlled, detection and repair of major leaks, 71% efficiency	132
Chlorobenzene production	2869	Tail gas treatment	30130101	Benzene	71432	1.04 lb/ton chlorobenzene produced	Uncontrolled, hypothetical plant	132
Chlorobenzene production	2869	Tail gas treatment	30130101	Benzene	71432	0.0134 lb/ton chlorobenzene produced	Controlled, carbon adsorption, 98.7% eff., based on hypothetical plant	132
Chlorobenzene production	2869	Fugitive emissions	30130180	Chlorobenzene	108907	1.38 lb/ton chlorobenzene produced	Estimates based on plant visits, no specifics on control, likely to be high value	48
Chlorobenzene production	2869	Process emissions	30130135	Chlorobenzene	108907	4.12 lb/ton chlorobenzene produced	Estimates based on plant visits, no specifics on control, likely to be high value	48
Chlorobenzene production	2869	Storage tank emissions	407	Chlorobenzene	108907	0.9 lb/ton chlorobenzene produced	Estimates based on plant visits, no specifics on control, likely to be high value	48
Chlorofluorocarbon 113 and 114 production	2869	Equipment leak	30112780	Tetrachloroethylene	127184	3.4 tons/year	Two plants, estimated free uncontrolled (7.3 mg/year) using 60% control efficiency through monthly inspection	208
Chlorofluorocarbon 113 and 114 production	2869	Equipment leak	30112780	Tetrachloroethylene	127184	8.1 tons/year	Average of two plants, based on average emission factor method of estimating equipment leaks	208
Chlorofluorocarbon 113 and 114 production	2869	Storage	30112740	Tetrachloroethylene	127184	0.082 lb/ton	One plant, based on uncontrolled emission factor (.20 kg/MG) assuming refrigerated condenser, control efficiency of 85%	208

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Chlorofluorocarbon 113 and 114 production	2869	Storage - contact internal floating roof	30112740	Tetrachloroethylene	127184	0.018 lb/ton CFC-113 produced	One plant, based on controlled PCE storage emission rate (660 kg/yr) divided by CFC-113 production rate (16,000 Mg/yr)	208
Chlorofluorocarbon 113 and 114 production	2869	Storage	30112740	Tetrachloroethylene	127184	0.056 lb/ton CFC-113 produced	One plant, based on PCE storage emission rate (4,400 kg/yr) divided by CFC-113 prod. rate (16,000 Mg/yr), uncontrolled	208
Chloroform production (any method)	2869	Handling (loading of tank trucks and tank cars)	301125	Chloroform	67663	0.7 lb/ton loaded	Uncontrolled	144
Chloroform production - methane chlorination	2869	Distillation area emergency inert gas vent	30112510	Chloroform	67663	0.014 lb/ton total chloromethanes prod.	Uncontrolled	144
Chloroform production - methane chlorination	2869	Handling/disposing liquid waste	90300701	Chloroform	67663	0.42 lb/ton chloroform produced	Uncontrolled, assumed all CHCl3 evaporates	144
Chloroform production - methane chlorination	2869	Methane inert purge vent	30112511	Chloroform	67663	0.0066 lb/ton total chloromethanes prod.	Uncontrolled	144
Chloroform production - methane chlorination	2869	Process fugitive emissions	30112514	Chloroform	67663	6.83 lb/hr	Uncontrolled	144
Chloroform production - methane chlorination	2869	Process fugitive emissions	30112514	Chloroform	67663	2.42 lb/hr	Controlled, monthly I&M, see reference for more control values	144
Chloroform production - methane chlorination	2869	Storage tank emissions	407060	Chloroform	67663	3 lb/ton total chloromethanes produced	Total of crude, dev and product tanks for 1.1 x 10E8 lb plant, fixed roof tanks	144
Chloroform production - methanol/CH3Cl chlorination	2869	Process fugitive emissions	30112514	Chloroform	67663	1.01 lb/hr	Controlled, monthly I&M, see reference for more control values	144
Chloroform production - methanol/CH3Cl chlorination	2869	Process fugitive emissions	30112514	Chloroform	67663	3.09 lb/hr	Uncontrolled	144
Chloroform production - methanol/CH3Cl chlorination	2869	Storage tank emissions	407060	Chloroform	67663	3.3 lb/ton total chloromethane produce	Total of crude, surge, dev, product tanks for 4.96 x 10E7 lb plant, fixed roof tanks	144
Chloromethane production - methane chlorination	2869	Recycled methane inert gas purge vent	30112511	Carbon tetrachloride	56235	<0.0084 lb/ton total chlorometh. capac.	Uncontrolled, based on information supplied by one producer	71
Chloromethane production - methane chlorination	2869	Recycled methane inert gas purge vent	30112511	Chloroform	67663	0.0066 lb/ton total chloromethanes capa	Uncontrolled, based on information supplied by one producer	71
Chloromethane production - methane chlorination	2869	Recycled methane inert gas purge vent	30112511	Chloromethane	74873	4.08 lb/ton total chloromethanes capac.	Uncontrolled, based on information supplied by one producer	71
Chloromethane production - methane chlorination	2869	Recycled methane inert gas purge vent	30112511	Methylene chloride	75092	0.102 lb/ton total chloromethanes capac.	Uncontrolled, based on information supplied by one producer	71

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Chloromethane production - methanol/CH3Cl chlorination	2869	Inert-gas purge vent for condenser associated with chloroform distill.	30112510	Chloroform	67663	0.0112 lb/ton total chloromethanes prod.	Uncontrolled, hypoth. fac. producing 25% methyl chloride, 48% MC, 25% chloroform, & 2% carbon tet.	72
Chloromethane production - methanol/CH3Cl chlorination	2869	Inert-gas purge vent for condenser assoc. w/ meth. chlor. prod. recov.	30112510	Chloromethane	74873	3 lb/ton total chloromethanes prod.	Uncontrolled, hypoth. fac. producing 25% methyl chloride, 48% MC, 25% chloroform, & 2% carbon tet.	72
Chloromethane production - methanol/CH3Cl chlorination	2869	Inert-gas purge vent for condenser associated with MC distillation	30112510	Methylene chloride	75092	0.038 lb/ton total chloromethanes prod.	Uncontrolled, hypoth. fac. producing 25% methyl chloride, 48% MC, 25% chloroform, & 2% carbon tet.	72
Chrome plating, decorative	34	Plating tank	30901001	Chromium	7440473	9.7 x 10E-8 lb/hr/sqa	Total chrome, ave. of 3 values, based on current (amperes) used, used fluorocarbon fume suppressant	139
Chrome plating, decorative	34	Plating tank	30901001	Chromium	7440473	0.01025 lb/hr/ft2	Total chrome, ave. of 3 values, based on surface area of tank, used fluorocarbon fume suppressant	139
Chrome plating, decorative	34	Plating tank	30901001	Chromium	7440473	2.6 x 10E-8 lb/hr/sqa	Hex chrome, ave. of 3 values, based on current (amperes) used, used fluorocarbon fume suppressant	139
Chrome plating, decorative	34	Plating tank	30901001	Chromium	7440473	0.00246 lb/hr/ft2	Hex chrome, ave. of 3 values, based on surface area of tank, used fluorocarbon fume suppressant	139
Chrome plating, decorative	3471	Chromic acid anodizing tank	30901001	Chromium	7440473	0.002 - 0.004 lb/hr	Estimated by mass balance, uncontrolled, based on tank capacity.	209
Chrome plating, decorative	3471	Chromic acid anodizing tank	30901001	Chromium	7440473	0.00012 lb/hr/sq ft surface area	Estimated by mass balance, uncontrolled, based on tank surface area	209
Chrome plating, decorative	3471	Plating tank	30901001	Chromium (Cr 6+)	18540299	1.0 x 10E-8 lb/sqa hr	Average of six tests, controlled by foam blanket fume suppressant with wetting agent, range is 7 x 10E-9 - 1.3 x 10E-8 lb/sqa hr	209
Chrome plating, decorative	3471	Plating tank	30901001	Chromium (Cr 6+)	18540299	3.6 x 10E-6 lb/sqa hr	Average of six tests, uncontrolled, range is 2.9 x 10E-6 to 4.4 x 10E-6 lb/sqa hr	209
Chrome plating, hard	34	Plating tank	30901001	Chromium	7440473	5.7 x 10E-6 ft/hr/sqa	Total chrome, average of 3 values, based on amperes used, uncontrolled	139
Chrome plating, hard	34	Plating tank	30901001	Chromium	7440473	5.33 lb/hr/ft2	Total chrome, ave. of 3 values, based on tank surface area, uncontrolled	139
Chrome plating, hard	34	Plating tank	30901001	Chromium	7440473	1.06 x 10E-5 lb/hr/sqa	Total chrome, average factor for uncontrolled plating tanks	139
Chrome plating, hard	34	Plating tank	30901001	Chromium (Cr 6+)	18540299	2.85 x 10E-6 lb/hr/sqa	Average of 3 values, based on amperes used, uncontrolled	139
Chrome plating, hard	34	Plating tank	30901001	Chromium (Cr 6+)	18540299	2.46 x 10E-4 lb/hr/ft2	Average of 3 values, based on tank surface area, uncontrolled	139

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Chrome plating, hard	3471	Plating tank	30901001	Chromium	7440473	1.44 x 10E-4 lb/hr/ft2 tank area	Range 9.33 x 10E-5 - 8.2 x 10E-4 and 8.82 x 10E-5 - 2.46 x 10E-4, as Cr 6+, uncontrolled	161
Chrome plating, hard	3471	Chromic acid anodizing tank	30901001	Chromium (Cr 6+)	18540299	0.00191 lb/hr/ft2 tank area	Uncontrolled	161
Chrome plating, hard	3471	Plating tank	30901001	Chromium (Cr 6+)	18540299	3.08 x 10E-7 lb/amp hr	Average of six tests, controlled by double packed-bed scrubber followed by chevron blades.	209
Chrome plating, hard	3471	Plating tank	30901201	Chromium (Cr 6+)	18540299	3.08 x 10E-7 lb/amp hr	Average of eleven tests, controlled by single packed-bed scrubber	209
Chrome plating, hard	3471	Plating tank	30901001	Chromium (Cr 6+)	18540299	1.23 x 10E-6 lb/amp hr	Average of three tests, controlled by double packed-bed scrubber	209
Chrome plating, hard	3471	Plating tank	30901001	Chromium (Cr 6+)	18540299	1.74 x 10E-7 lb/amp hr	Average of three tests, controlled by mesh pad mist eliminator w/2sets of chevron blades followed by 2 pads	209
Chrome plating, hard	3471	Plating tank	30901001	Chromium (Cr 6+)	18540299	3.96 x 10E-7 lb/amp hr	Average of three tests, controlled by mesh pad mist eliminator - one mesh pad	209
Chrome plating, hard	3471	Plating tank	30901001	Chromium (Cr 6+)	18540299	8.8 x 10E-8 - 1.54 x E-7 lb/amp hr	Range of five tests, controlled by mesh pad mist eliminator - two pads	209
Chrome plating, hard	3471	Plating tank	30901001	Chromium (Cr 6+)	18540299	3.30 x 10E-7 lb/amp hr	Average of three tests, controlled by Chevron-blade misteliminators-double set blades	209
Chrome plating, hard	3471	Plating tank	30901001	Chromium (Cr 6+)	18540299	5.9 x 10E-7 - 1.2 x 10E-6 lb/amp hr	Range of four tests, controlled by Chevron-blade mist eliminators - single set blades	209
Chrome plating, hard	3471	Plating tank	30901001	Chromium (Cr 6+)	18540299	2.02 x 10E-5 lb/amp hr	Uncontrolled, average of 10 data sets covering 44 tests, range is 22 x 10E-6 to 4.95 x 10E-5	209
Chromic acid production	2819	Chromic acid filter	301	Chromium	7440473	2.8 lb/ton raw material processed	Uncontrolled, as total chromium, likely to be Cr VI	161
Chromic acid production	2819	Chromic acid filter	301	Chromium	7440473	0.02 lb/ton raw material processed	Scrubber, as total chromium, likely to be Cr VI	161
Chromic acid production	2819	Chromic acid reactor, melter, flaker	301	Chromium	7440473	0.4 lb/ton raw material processed	Uncontrolled, as total chromium, likely to be Cr VI	161
Chromic acid production	2819	Chromic acid reactor, melter, flaker	301	Chromium	7440473	0.02 lb/ton raw material processed	Scrubber, as total chromium, likely to be Cr VI	161
Chromic acid production	2819	Packaging	301	Chromium	7440473	1.4 lb/ton raw material processed	Uncontrolled, as total chromium, likely to be Cr VI	161
Chromic acid production	2819	Packaging	301	Chromium	7440473	0.08 lb/ton raw material processed	Scrubber, as total chromium, likely to be Cr VI	161

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Chromite ore refining	3339	Chromite ore dryer	303	Chromium	7440473	0.01 lb/ton ore processed	Bag collector, as total chromium, likely Cr III	161
Chromite ore refining	3339	Chromite ore dryer	303	Chromium	7440473	0.002 lb/ton ore processed	Wet scrubber (assumed 99%), as total chromium, likely Cr III	161
Chromite ore refining	3339	Hardinge mill and cyclone	303	Chromium	7440473	0.006 lb/ton ore processed	Fabric filter, as total chromium, likely Cr III	161
Chromite ore refining	3339	Refined ore storage	303	Chromium	7440473	0.1 lb/ton ore processed	Uncontrolled, as total chromium, likely Cr III	161
Chromite ore refining	3339	Refined ore storage	303	Chromium	7440473	0.0001 lb/ton ore processed	Dust collector, as total chromium, likely Cr III	161
Coal and refuse-derived fuel combustion	49	Flue gas	1	Polychlorinated dibenzofurans, total		Not detectable	One location, detection limit = 0.25 ng/m3	119
Coal and refuse-derived fuel combustion	49	Flue gas	1	Polychlorinated dibenzo-p-dioxins, total		Not detectable	One location, detection limit = 0.25 ng/m3	119
Coal and refuse-derived fuel combustion	49	Flue gas	1	Tetrachlorodibenzo-p-dioxins, total		Not detectable	One location, detection limit = 5 ng/m3, 15% RDF	119
Coal combustion				Ammonia	7664417	0.00056 lb/ton coal burned	Sources emitting > 100 tons HCl/year	179
Coal combustion		Anthracite coal-fired cyclone boilers, util/commerc/industr	1	Arsenic	7440382	48-121 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired cyclone boilers, util/commerc/industr	1	Arsenic	7440382	22-89 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired cyclone boilers, util/commerc/industr	1	Arsenic	7440382	8.4 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired overfeed stoker boilers, util/commerc/industr	1	Arsenic	7440382	210-401 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired overfeed stoker boilers, util/commerc/industr	1	Arsenic	7440382	103-194 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired overfeed stoker boilers, util/commerc/industr	1	Arsenic	7440382	26-50 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Arsenic	7440382	264 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion		Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Arsenic	7440382	130 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Arsenic	7440382	15.6 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Arsenic	7440382	6.7 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Arsenic	7440382	521 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Arsenic	7440382	256 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Arsenic	7440382	65 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Arsenic	7440382	29.8 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired spreader stoker boilers, util/commerc/industr	1	Arsenic	7440382	103-210 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired spreader stoker boilers, util/commerc/industr	1	Arsenic	7440382	50-103 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired spreader stoker boilers, util/commerc/industr	1	Arsenic	7440382	13-26 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Bituminous boiler	1	Arsenic	7440382	2.38 lb/ton flyash	1.36 - 3.4 lb/ton of flyash	3
Coal combustion		Bituminous coal-fired cyclone boiler, util/commerc/industr	1	Arsenic	7440382	119-310 lb/10E12 Btu	Uncontrolled, based on measured and calculated emission factors	36
Coal combustion		Bituminous coal-fired cyclone boiler, util/commerc/industr	1	Arsenic	7440382	84-192 lb/10E12 Btu	Multiclone, calculated based on engineering judgement	36
Coal combustion		Bituminous coal-fired cyclone boiler, util/commerc/industr	1	Arsenic	7440382	14.4 lb/10E12 Btu	ESP, based on source tests	36

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion		Bituminous coal-fired overfeed stoker boiler, util/commerc/industr	1	Arsenic	7440382	542-1030 lb/10E12 Btu	Uncontrolled, based on source tests	36
Coal combustion		Bituminous coal-fired overfeed stoker boiler, util/commerc/industr	1	Arsenic	7440382	265-505 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Bituminous coal-fired overfeed stoker boiler, util/commerc/industr	1	Arsenic	7440382	67-129 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Arsenic	7440382	684 lb/10E12 Btu	Uncontrolled, based on emission test data	36
Coal combustion		Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Arsenic	7440382	335 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Arsenic	7440382	40.1 lb/10E12 Btu	Controlled with ESP, based on source tests	36
Coal combustion		Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Arsenic	7440382	17.2 lb/10E12 Btu	Controlled with scrubber, based on source tests	36
Coal combustion		Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Arsenic	7440382	1340 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Arsenic	7440382	658 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Arsenic	7440382	168 lb/10E12 Btu	Controlled with ESP, based on source tests	36
Coal combustion		Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Arsenic	7440382	76.7 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Coal combustion		Bituminous coal-fired spreader stoker boilers, util/commerc/industr	1	Arsenic	7440382	264-942 lb/10E12 Btu	Uncontrolled, based on source tests	36
Coal combustion		Bituminous coal-fired spreader stoker boilers, util/commerc/industr	1	Arsenic	7440382	129-269 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion		Bituminous coal-fired spreader stoker boilers, util/cogenerc/industr	1	Arsenic	7440382	33-67 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired cyclone boilers, util/cogenerc/industr	1	Arsenic	7440382	235-432 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired cyclone boilers, util/cogenerc/industr	1	Arsenic	7440382	114-310 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired cyclone boilers, util/cogenerc/industr	1	Arsenic	7440382	29 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired overfeed stoker boiler, util/cogenerc/industr	1	Arsenic	7440382	1100-2100 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired overfeed stoker boiler, util/cogenerc/industr	1	Arsenic	7440382	540-1030 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired overfeed stoker boiler, util/cogenerc/industr	1	Arsenic	7440382	137-263 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized dry bottom boiler, util/cogenerc/industr	1	Arsenic	7440382	1390 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized dry bottom boiler, util/cogenerc/industr	1	Arsenic	7440382	683 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized dry bottom boiler, util/cogenerc/industr	1	Arsenic	7440382	82 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized dry bottom boiler, util/cogenerc/industr	1	Arsenic	7440382	39 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized wet bottom boilers, util/cogenerc/industr	1	Arsenic	7440382	2730 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion		Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	Arsenic	7440382	1360 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	Arsenic	7440382	343 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	Arsenic	7440382	196 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired spreader stoker boilers, util/commerc/industr	1	Arsenic	7440382	930-1100 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired spreader stoker boilers, util/commerc/industr	1	Arsenic	7440382	263-540 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired spreader stoker boilers, util/commerc/industr	1	Arsenic	7440382	67-137 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired cyclone boilers, util/commerc/industr	1	Beryllium	7440417	<50 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired cyclone boilers, util/commerc/industr	1	Beryllium	7440417	<32 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired cyclone boilers, util/commerc/industr	1	Beryllium	7440417	0.32 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized (wet/dry bot.) boilers, util/comm/ind	1	Beryllium	7440417	50 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized (wet/dry bot.) boilers, util/comm/ind	1	Beryllium	7440417	32 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized (wet/dry bot.) boilers, util/comm/ind	1	Beryllium	7440417	1.0 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion		Anthracite coal-fired pulverized (wet/dry bot.) boilers, util/comm/ind	1	Beryllium	7440417	0.07 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	34
Coal combustion		Anthracite coal-fired stoker boilers, util/commerc/industr	1	Beryllium	7440417	45 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Coal combustion		Anthracite coal-fired stoker boilers, util/commerc/industr	1	Beryllium	7440417	6-28 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Coal combustion		Anthracite coal-fired stoker boilers, util/commerc/industr	1	Beryllium	7440417	3.4 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Coal combustion		Bituminous coal-fired cyclone boiler, util/commerc/industr	1	Beryllium	7440417	<81 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Coal combustion		Bituminous coal-fired cyclone boiler, util/commerc/industr	1	Beryllium	7440417	<52 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Coal combustion		Bituminous coal-fired cyclone boiler, util/commerc/industr	1	Beryllium	7440417	0.52 lb/10E12 Btu	Controlled with ESP, based on source tests	34
Coal combustion		Bituminous coal-fired pulverized (dry/wet bot.) boilers, util/comm/ind	1	Beryllium	7440417	81 lb/10E12 Btu	Uncontrolled, based on source tests for dry bottom boilers	34
Coal combustion		Bituminous coal-fired pulverized (dry/wet bot.) boilers, util/comm/ind	1	Beryllium	7440417	52 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Coal combustion		Bituminous coal-fired pulverized (dry/wet bot.) boilers, util/comm/ind	1	Beryllium	7440417	3.0 lb/10E12 Btu	Controlled with ESP, based on source tests	34
Coal combustion		Bituminous coal-fired pulverized (dry/wet bot.) boilers, util/comm/ind	1	Beryllium	7440417	0.11 lb/10E12 Btu	Controlled with scrubber, based on one source test	34
Coal combustion		Bituminous coal-fired spreader stoker boilers, util/commerc/industr	1	Beryllium	7440417	73 lb/10E12 Btu	Uncontrolled, based on source tests	34
Coal combustion		Bituminous coal-fired spreader stoker boilers, util/commerc/industr	1	Beryllium	7440417	9.8-46 lb/10E12 Btu	Controlled with multiclone, based on source tests and engineering judgement	34

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion		Bituminous coal-fired spreader stoker boilers, util/commerc/industr	1	Beryllium	7440417	5.9 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Coal combustion		Lignite coal-fired cyclone boilers, util/commerc/industr	1	Beryllium	7440417	<130 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Coal combustion		Lignite coal-fired cyclone boilers, util/commerc/industr	1	Beryllium	7440417	<84 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Coal combustion		Lignite coal-fired cyclone boilers, util/commerc/industr	1	Beryllium	7440417	0.84 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Coal combustion		Lignite coal-fired pulverized (dry/wet bottom) boilers, util/comm/ind	1	Beryllium	7440417	131 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Coal combustion		Lignite coal-fired pulverized (dry/wet bottom) boilers, util/comm/ind	1	Beryllium	7440417	84 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Coal combustion		Lignite coal-fired pulverized (dry/wet bottom) boilers, util/comm/ind	1	Beryllium	7440417	4.9 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Coal combustion		Lignite coal-fired pulverized (dry/wet bottom) boilers, util/comm/ind	1	Beryllium	7440417	0.18 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	34
Coal combustion		Lignite coal-fired spreader stoker boilers, util/commerc/industr	1	Beryllium	7440417	118 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Coal combustion		Lignite coal-fired spreader stoker boilers, util/commerc/industr	1	Beryllium	7440417	16-74 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Coal combustion		Lignite coal-fired spreader stoker boilers, util/commerc/industr	1	Beryllium	7440417	9.9 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Coal combustion		Anthracite coal-fired cyclone boilers, util/commerc/industr	1	Cadmium	7440439	7.0 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion		Anthracite coal-fired cyclone boilers, util/commerc/industr	1	Cadmium	7440439	5.0 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired overfeed stoker boiler, util/commerc/industr	1	Cadmium	7440439	11-20 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired overfeed stoker boiler, util/commerc/industr	1	Cadmium	7440439	7.5-14 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired overfeed stoker boiler, util/commerc/industr	1	Cadmium	7440439	2.7-5.2 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Cadmium	7440439	11 lb/10E12 Btu	Uncontrolled with ESP, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Cadmium	7440439	7.9 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Cadmium	7440439	2.3 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Cadmium	7440439	0.09-0.40 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Cadmium	7440439	11-17 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Cadmium	7440439	8.0-12 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Cadmium	7440439	0.35 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Cadmium	7440439	0.32 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired spreader stoker boiler, util/commerc/industr	1	Cadmium	7440439	8.2-11 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion		Anthracite coal-fired spreader stoker boiler, util/commerc/industr	1	Cadmium	7440439	1.6-7.8 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Coal combustion		Anthracite coal-fired spreader stoker boiler, util/commerc/industr	1	Cadmium	7440439	1.3-2.7 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Coal combustion		Bituminous coal-fired cyclone boiler, util/commerc/industr	1	Cadmium	7440439	28 lb/10E12 Btu	Uncontrolled, based on source test	34
Coal combustion		Bituminous coal-fired cyclone boiler, util/commerc/industr	1	Cadmium	7440439	20 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Coal combustion		Bituminous coal-fired cyclone boiler, util/commerc/industr	1	Cadmium	7440439	1.3 lb/10E12 Btu	Controlled with ESP, based on source tests	34
Coal combustion		Bituminous coal-fired overfeed stoker boiler, util/commerc/industr	1	Cadmium	7440439	43-82 lb/10E12 Btu	Uncontrolled, based on source tests	34
Coal combustion		Bituminous coal-fired overfeed stoker boiler, util/commerc/industr	1	Cadmium	7440439	30-58 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Coal combustion		Bituminous coal-fired overfeed stoker boiler, util/commerc/industr	1	Cadmium	7440439	11-21 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Coal combustion		Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Cadmium	7440439	44.4 lb/10E12 Btu	Controlled, based on source tests	34
Coal combustion		Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Cadmium	7440439	31.4 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Coal combustion		Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Cadmium	7440439	9.0-20 lb/10E12 Btu	Controlled with ESP, based on source tests	34
Coal combustion		Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Cadmium	7440439	0.28-1.6 lb/10E12 Btu	Controlled with scrubber, based on source tests	34
Coal combustion		Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Cadmium	7440439	49-70 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34

INDUSTRIAL PROCESS	EIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion		Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Cadmium	7440439	32-90 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Cadmium	7440439	1.4 lb/10E12 Btu	Controlled with ESP, based on source tests	36
Coal combustion		Bituminous coal-fired spreader stoker boilers, util/commerc/industr	1	Cadmium	7440439	21-43 lb/10E12 Btu	Uncontrolled, based on source tests	36
Coal combustion		Bituminous coal-fired spreader stoker boilers, util/commerc/industr	1	Cadmium	7440439	6.6-30 lb/10E12 Btu	Controlled with multiclone, based on measured and calculated emission factors	36
Coal combustion		Bituminous coal-fired spreader stoker boilers, util/commerc/industr	1	Cadmium	7440439	5.3-11 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired cyclone boilers, util/commerc/industr	1	Cadmium	7440439	31 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired cyclone boilers, util/commerc/industr	1	Cadmium	7440439	22 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired cyclone boilers, util/commerc/industr	1	Cadmium	7440439	1.4 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired overfeed stoker boiler, util/commerc/industr	1	Cadmium	7440439	47-90 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired overfeed stoker boiler, util/commerc/industr	1	Cadmium	7440439	33-64 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired overfeed stoker boiler, util/commerc/industr	1	Cadmium	7440439	12-23 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	Cadmium	7440439	48.0 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	Cadmium	7440439	34.0 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion		Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	Cadmium	7440439	10 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	Cadmium	7440439	0.38-1.8 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	Cadmium	7440439	49-77 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	Cadmium	7440439	35-55 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	Cadmium	7440439	1.5 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired spreader stoker boilers, util/commerc/industr	1	Cadmium	7440439	23-47 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired spreader stoker boilers, util/commerc/industr	1	Cadmium	7440439	7.3-33 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired spreader stoker boilers, util/commerc/industr	1	Cadmium	7440439	9.8-12 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired cyclone boilers, util/commerc/industr	1	Chromium	7440473	902-3720 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired cyclone boilers, util/commerc/industr	1	Chromium	7440473	290-2150 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired cyclone boilers, util/commerc/industr	1	Chromium	7440473	143-1060 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired cyclone boilers, util/commerc/industr	1	Chromium	7440473	41-309 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion		Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Chromium	7440473	2420-3720 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Chromium	7440473	1400-2150 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Chromium	7440473	690-1060 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Chromium	7440473	198-305 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired stoker boilers, util/commerc/industr	1	Chromium	7440473	2230-3720 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired stoker boilers, util/commerc/industr	1	Chromium	7440473	1290-2150 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired stoker boilers, util/commerc/industr	1	Chromium	7440473	636-1060 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Anthracite pulverized dry bottom boilers, util/commerc/industr	1	Chromium	7440473	2970-3720 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Anthracite pulverized dry bottom boilers, util/commerc/industr	1	Chromium	7440473	1710-2150 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Anthracite pulverized dry bottom boilers, util/commerc/industr	1	Chromium	7440473	846-1060 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Anthracite pulverized dry bottom boilers, util/commerc/industr	1	Chromium	7440473	244-305 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Coal combustion		Bituminous coal-fired cyclone boiler, util/commerc/industr	1	Chromium	7440473	212-1570 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Bituminous coal-fired cyclone boiler, util/commerc/industr	1	Chromium	7440473	122-906 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion		Bituminous coal-fired cyclone boiler, util/commerc/industr	1	Chromium	7440473	60-447 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Coal combustion		Bituminous coal-fired cyclone boiler, util/commerc/industr	1	Chromium	7440473	17-129 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	34
Coal combustion		Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Chromium	7440473	1250-1570 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Coal combustion		Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Chromium	7440473	721-906 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Coal combustion		Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Chromium	7440473	356-447 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Coal combustion		Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Chromium	7440473	102-129 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	34
Coal combustion		Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Chromium	7440473	0.0034 lb/10E12 Btu	Utility boiler emissions of Cr+6 only, controlled with fabric filter, based on source test	34
Coal combustion		Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Chromium	7440473	1020-1570 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Coal combustion		Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Chromium	7440473	588-906 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Coal combustion		Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Chromium	7440473	291-477 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Coal combustion		Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Chromium	7440473	84-129 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	34
Coal combustion		Bituminous coal-fired cyclone stoker boilers, util/commerc/industr	1	Chromium	7440473	942-1570 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Coal combustion		Bituminous coal-fired cyclone stoker boilers, util/commerc/industr	1	Chromium	7440473	844-906 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion		Bituminous coal-fired spreader stoker boilers, util/commerc/industr	1	Chromium	7440473	268-447 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Bituminous coal-fired spreader stoker boilers, util/commerc/industr	1	Chromium	7440473	1.5-5.5 lb/10E12 Btu	Indus. & commercial boiler emis. of Cr+6 only, controlled with 2 mechan. ppt in series, source test	36
Coal combustion		Lignite coal-fired cyclone boilers, util/commerc/industr	1	Chromium	7440473	253-1880 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired cyclone boilers, util/commerc/industr	1	Chromium	7440473	146-1080 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired cyclone boilers, util/commerc/industr	1	Chromium	7440473	72-936 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired cyclone boilers, util/commerc/industr	1	Chromium	7440473	21-194 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	Chromium	7440473	1500-1880 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	Chromium	7440473	866-1080 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	Chromium	7440473	420-936 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	Chromium	7440473	123-194 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	Chromium	7440473	1220-1880 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	Chromium	7440473	704-1080 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion		Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	Chromium	7440473	348-536 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	Chromium	7440473	100-154 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired spreader stoker boilers, util/commerc/industr	1	Chromium	7440473	1130-1880 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired spreader stoker boilers, util/commerc/industr	1	Chromium	7440473	767-1080 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired spreader stoker boilers, util/commerc/industr	1	Chromium	7440473	379-536 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired cyclone boilers, util/commerc/industr	1	Copper	7440508	141-927 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired cyclone boilers, util/commerc/industr	1	Copper	7440508	95-930 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired cyclone boilers, util/commerc/industr	1	Copper	7440508	24 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired overfeed stoker boilers, util/commerc/industr	1	Copper	7440508	1080-1490 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired overfeed stoker boilers, util/commerc/industr	1	Copper	7440508	445-881 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired overfeed stoker boilers, util/commerc/industr	1	Copper	7440508	142-223 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Copper	7440508	927 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Copper	7440508	930 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion		Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Copper	7440508	212 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Coal combustion		Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Copper	7440508	26 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	34
Coal combustion		Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Copper	7440508	626-927 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Coal combustion		Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Copper	7440508	372-550 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Coal combustion		Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Copper	7440508	94 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Coal combustion		Anthracite coal-fired spreader stoker boilers, util/commerc/industr	1	Copper	7440508	490-1080 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Coal combustion		Anthracite coal-fired spreader stoker boilers, util/commerc/industr	1	Copper	7440508	290-645 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Coal combustion		Anthracite coal-fired spreader stoker boilers, util/commerc/industr	1	Copper	7440508	73-162 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Coal combustion		Bituminous coal-fired cyclone boiler, util/commerc/industr	1	Copper	7440508	147-848 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Coal combustion		Bituminous coal-fired cyclone boiler, util/commerc/industr	1	Copper	7440508	87-503 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Coal combustion		Bituminous coal-fired cyclone boiler, util/commerc/industr	1	Copper	7440508	22 lb/10E12 Btu	Controlled with ESP, based on source tests	34
Coal combustion		Bituminous coal-fired overfeed stoker boiler, util/commerc/industr	1	Copper	7440508	987-1360 lb/10E12 Btu	Uncontrolled, based on calculated and measured emission factors	34
Coal combustion		Bituminous coal-fired overfeed stoker boiler, util/commerc/industr	1	Copper	7440508	890-806 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SEC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion		Bituminous coal-fired overfeed stoker boiler, util/commerc/industr	1	Copper	7440508	148-204 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Coal combustion		Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Copper	7440508	848 lb/10E12 Btu	Uncontrolled, based on source tests	34
Coal combustion		Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Copper	7440508	903 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Coal combustion		Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Copper	7440508	194 lb/10E12 Btu	Controlled with ESP, based on source tests	34
Coal combustion		Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Copper	7440508	34 lb/10E12 Btu	Controlled with scrubber, based on source tests	34
Coal combustion		Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Copper	7440508	572-848 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Coal combustion		Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Copper	7440508	340-903 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Coal combustion		Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Copper	7440508	86 lb/10E12 Btu	Controlled with ESP, based on source tests	34
Coal combustion		Bituminous coal-fired spreader stoker boilers, util/commerc/industr	1	Copper	7440508	448-987 lb/10E12 Btu	Uncontrolled, based on source tests	34
Coal combustion		Bituminous coal-fired spreader stoker boilers, util/commerc/industr	1	Copper	7440508	265-590 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Coal combustion		Bituminous coal-fired spreader stoker boilers, util/commerc/industr	1	Copper	7440508	67-148 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Coal combustion		Lignite coal-fired cyclone boilers, util/commerc/industr	1	Copper	7440508	258-1490 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Coal combustion		Lignite coal-fired cyclone boilers, util/commerc/industr	1	Copper	7440508	183-984 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion		Lignite coal-fired cyclone boilers, util/commerc/industr	1	Copper	7440508	39 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired overfeed stoker boiler, util/commerc/industr	1	Copper	7440508	1730-2390 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired overfeed stoker boiler, util/commerc/industr	1	Copper	7440508	1040-1420 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired overfeed stoker boiler, util/commerc/industr	1	Copper	7440508	260-350 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	Copper	7440508	1490 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	Copper	7440508	884 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	Copper	7440508	341 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	Copper	7440508	42 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	Copper	7440508	1010-1490 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	Copper	7440508	597-884 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	Copper	7440508	101 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion		Lignite coal-fired spreader stoker boilers, util/commerc/industr	1	Copper	7440508	787-1730 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired spreader stoker boilers, util/commerc/industr	1	Copper	7440508	465-1040 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired spreader stoker boilers, util/commerc/industr	1	Copper	7440508	118-260 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Coal-fired boilers or furnaces, util/commerc/industr/residential	1	Formaldehyde	50000	170.5 lb/10E12 Btu	Uncontrolled, based on measured emis. factors, incomp. data to characterize emis. by boiler type	36
Coal combustion		Anthracite coal-fired cyclone boilers, util/commerc/industr	1	Manganese	7439965	710-1340 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired cyclone boilers, util/commerc/industr	1	Manganese	7439965	332-625 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired cyclone boilers, util/commerc/industr	1	Manganese	7439965	159 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired cyclone boilers, util/commerc/industr	1	Manganese	7439965	72-135 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Manganese	7439965	3070 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Manganese	7439965	1430 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Manganese	7439965	661 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Manganese	7439965	37 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Manganese	7439965	832-3070 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion		Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Manganese	7439965	386-1430 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Manganese	7439965	182 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired stoker boilers, util/commerc/industr	1	Manganese	7439965	2230 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired stoker boilers, util/commerc/industr	1	Manganese	7439965	202-1040 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Anthracite coal-fired stoker boilers, util/commerc/industr	1	Manganese	7439965	32-489 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Bituminous coal-fired cyclone boiler, util/commerc/industr	1	Manganese	7439965	490-1300 lb/10E12 Btu	Uncontrolled, based on measured and calculated emission factors	36
Coal combustion		Bituminous coal-fired cyclone boiler, util/commerc/industr	1	Manganese	7439965	322-607 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Bituminous coal-fired cyclone boiler, util/commerc/industr	1	Manganese	7439965	151 lb/10E12 Btu	Controlled with ESP, based on source tests	36
Coal combustion		Bituminous coal-fired cyclone boiler, util/commerc/industr	1	Manganese	7439965	70-131 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Coal combustion		Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Manganese	7439965	2980 lb/10E12 Btu	Uncontrolled, based on source tests	36
Coal combustion		Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Manganese	7439965	1390 lb/10E12 Btu	Controlled with multiclone, based on controlled and uncontrolled emission test data	36
Coal combustion		Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Manganese	7439965	642 lb/10E12 Btu	Controlled with ESP, based on source tests	36
Coal combustion		Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Manganese	7439965	36 lb/10E12 Btu	Controlled with scrubber, based on source tests	36

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion		Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Manganese	7439965	808-2980 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Manganese	7439965	377-1390 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Manganese	7439965	177 lb/10E12 Btu	Controlled with ESP, based on source tests	36
Coal combustion		Bituminous coal-fired spreader stoker boilers, util/commerc/industr	1	Manganese	7439965	2170 lb/10E12 Btu	Uncontrolled, based on source tests	36
Coal combustion		Bituminous coal-fired spreader stoker boilers, util/commerc/industr	1	Manganese	7439965	194-1010 lb/10E12 Btu	Controlled with multiclone, based on measured and calculated emission factors	36
Coal combustion		Bituminous coal-fired spreader stoker boilers, util/commerc/industr	1	Manganese	7439965	31-475 lb/10E12 Btu	Controlled with ESP, based on measured and calculated emission factors	36
Coal combustion		Lignite coal-fired cyclone boilers, util/commerc/industr	1	Manganese	7439965	3760-7090 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired cyclone boilers, util/commerc/industr	1	Manganese	7439965	1760-3310 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired cyclone boilers, util/commerc/industr	1	Manganese	7439965	823 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired cyclone boilers, util/commerc/industr	1	Manganese	7439965	382-714 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	Manganese	7439965	14,200 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	Manganese	7439965	7500 lb/10E12 Btu	Controlled by multiclone, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	Manganese	7439965	3500 lb/10E12 Btu	Controlled by ESP, calculated based on engineering judgement	36

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion		Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	Manganese	7439965	196 lb/10E12 Btu	Controlled by scrubber, calculated based on engineering judgement	34
Coal combustion		Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	Manganese	7439965	4,410-16,250 lb/10E12 Btu	Uncontrolled	34
Coal combustion		Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	Manganese	7439965	2050-7580 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Coal combustion		Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	Manganese	7439965	965 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Coal combustion		Lignite coal-fired spreader stoker boilers, util/commerc/industr	1	Manganese	7439965	11,800 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Coal combustion		Lignite coal-fired spreader stoker boilers, util/commerc/industr	1	Manganese	7439965	1070-5510 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Coal combustion		Lignite coal-fired spreader stoker boilers, util/commerc/industr	1	Manganese	7439965	149-2590 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Coal combustion		Anthracite coal-fired boilers, util/commerc/industr	1	Mercury	7439976	18 lb/10E12 Btu	Uncontrolled, based on engineering judgement	34
Coal combustion		Anthracite coal-fired boilers, util/commerc/industr	1	Mercury	7439976	9-18 lb/10E12 Btu	Controlled by ESP, based on engineering judgement	34
Coal combustion		Anthracite coal-fired boilers, util/commerc/industr	1	Mercury	7439976	1.7-8.3 lb/10E12 Btu	Controlled by scrubber, based on engineering judgement	34
Coal combustion		Anthracite coal-fired boilers, util/commerc/industr	1	Mercury	7439976	18 lb/10E12 Btu	Controlled by multiclone, based on engineering judgement	34
Coal combustion		Bituminous coal-fired boiler, util/commerc/industr	1	Mercury	7439976	16 lb/10E12 Btu	Uncontrolled, based on engineering judgement	34

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion		Bituminous coal-fired boiler, util/commerc/industr	1	Mercury	7439976	16 lb/10E12 Btu	Controlled by multicyclone, based on engineering judgement	36
Coal combustion		Bituminous coal-fired boiler, util/commerc/industr	1	Mercury	7439976	8-16 lb/10E12 Btu	Controlled by ESP, based on engineering judgement	36
Coal combustion		Bituminous coal-fired boiler, util/commerc/industr	1	Mercury	7439976	0.96-7.4 lb/10E12 Btu	Controlled by scrubber, based on engineering judgement	36
Coal combustion		Lignite coal-fired boilers, util/commerc/industr	1	Mercury	7439976	21 lb/10E12 Btu	Uncontrolled, based on engineering judgement	36
Coal combustion		Lignite coal-fired boilers, util/commerc/industr	1	Mercury	7439976	21 lb/10E12 Btu	Controlled by multiclone, based on engineering judgement	36
Coal combustion		Lignite coal-fired boilers, util/commerc/industr	1	Mercury	7439976	10-21 lb/10E12 Btu	Controlled by ESP, based on engineering judgement	36
Coal combustion		Lignite coal-fired boilers, util/commerc/industr	1	Mercury	7439976	1.2-9.6 lb/10E12 Btu	Controlled by scrubber, based on engineering judgement	36
Coal combustion		Anthracite coal-fired cyclone boilers, util/commerc/industr	1	Nickel	7440020	303-2240 lb/10E12 Btu	Uncontrolled, based on engineering judgement	36
Coal combustion		Anthracite coal-fired cyclone boilers, util/commerc/industr	1	Nickel	7440020	153-1140 lb/10E12 Btu	Controlled with multiclone, based on engineering judgement	36
Coal combustion		Anthracite coal-fired cyclone boilers, util/commerc/industr	1	Nickel	7440020	82-610 lb/10E12 Btu	Controlled with ESP, based on engineering judgement	36
Coal combustion		Anthracite coal-fired cyclone boilers, util/commerc/industr	1	Nickel	7440020	11-81 lb/10E12 Btu	Controlled with scrubber, based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Nickel	7440020	1790-2240 lb/10E12 Btu	Uncontrolled, based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Nickel	7440020	906-1140 lb/10E12 Btu	Controlled with multiclone, based on engineering judgement	36

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion		Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Nickel	7440020	487-610 lb/10E12 Btu	Controlled with ESP, based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Nickel	7440020	44-81 lb/10E12 Btu	Controlled with scrubber, based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Nickel	7440020	1440-2240 lb/10E12 Btu	Uncontrolled, based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Nickel	7440020	739-1140 lb/10E12 Btu	Controlled with multiclone, based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Nickel	7440020	597-610 lb/10E12 Btu	Controlled with ESP, based on engineering judgement	36
Coal combustion		Anthracite coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Nickel	7440020	44-81 lb/10E12 Btu	Controlled with scrubber, based on engineering judgement	36
Coal combustion		Anthracite coal-fired stoker boilers, util/commerc/industr	1	Nickel	7440020	1250-2240 lb/10E12 Btu	Uncontrolled, based on engineering judgement	36
Coal combustion		Anthracite coal-fired stoker boilers, util/commerc/industr	1	Nickel	7440020	485-1140 lb/10E12 Btu	Controlled with multiclone, based on engineering judgement	36
Coal combustion		Anthracite coal-fired stoker boilers, util/commerc/industr	1	Nickel	7440020	347-610 lb/10E12 Btu	Controlled with ESP, based on engineering judgement	36
Coal combustion		Bituminous coal-fired cyclone boiler, util/commerc/industr	1	Nickel	7440020	174-1290 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Bituminous coal-fired cyclone boiler, util/commerc/industr	1	Nickel	7440020	88-654 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Bituminous coal-fired cyclone boiler, util/commerc/industr	1	Nickel	7440020	47-352 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Bituminous coal-fired cyclone boiler, util/commerc/industr	1	Nickel	7440020	6.3-46 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion		Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Nickel	7440020	1030-1290 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Nickel	7440020	522-654 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Nickel	7440020	280-352 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Bituminous coal-fired pulverized dry bottom boilers, util/commerc/ind	1	Nickel	7440020	37-46 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Coal combustion		Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Nickel	7440020	840-1290 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Nickel	7440020	425-654 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Nickel	7440020	228-352 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Bituminous coal-fired pulverized wet bottom boilers, util/commerc/ind	1	Nickel	7440020	30-46 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Coal combustion		Bituminous coal-fired spreader stoker boilers, util/commerc/industr	1	Nickel	7440020	778-1290 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Bituminous coal-fired spreader stoker boilers, util/commerc/industr	1	Nickel	7440020	392-654 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Bituminous coal-fired spreader stoker boilers, util/commerc/industr	1	Nickel	7440020	211-352 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired cyclone boilers, util/commerc/industr	1	Nickel	7440020	157-1160 lb/10E12 Btu	Uncontrolled, based on engineering judgement	36
Coal combustion		Lignite coal-fired cyclone boilers, util/commerc/industr	1	Nickel	7440020	79-587 lb/10E12 Btu	Controlled with multiclone, based on engineering judgement	36

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion		Lignite coal-fired cyclone boilers, util/commerc/industr	1	Nickel	7440020	43-316 lb/10E12 Btu	Controlled with ESP, based on engineering judgement	36
Coal combustion		Lignite coal-fired cyclone boilers, util/commerc/industr	1	Nickel	7440020	5.6-42 lb/10E12 Btu	Controlled with scrubber, based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	Nickel	7440020	920-1160 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	Nickel	7440020	470-587 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	Nickel	7440020	252-316 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized dry bottom boiler, util/commerc/industr	1	Nickel	7440020	33-42 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	Nickel	7440020	184-1160 lb/10E12 Btu	Uncontrolled, based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	Nickel	7440020	382-587 lb/10E12 Btu	Controlled with multiclone, based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	Nickel	7440020	209-316 lb/10E12 Btu	Controlled with ESP, based on engineering judgement	36
Coal combustion		Lignite coal-fired pulverized wet bottom boilers, util/commerc/industr	1	Nickel	7440020	27-42 lb/10E12 Btu	Controlled with scrubber, based on engineering judgement	36
Coal combustion		Lignite coal-fired spreader stoker boilers, util/commerc/industr	1	Nickel	7440020	696-1160 lb/10E12 Btu	Uncontrolled, based on engineering judgement	36

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion		Lignite coal-fired spreader stoker boilers, util/commerc/industr	1	Nickel	7440020	352-587 lb/10E12 Btu	Controlled with multiclone, based on engineering judgement	34
Coal combustion		Lignite coal-fired spreader stoker boilers, util/commerc/industr	1	Nickel	7440020	189-316 lb/10E12 Btu	Controlled with ESP, based on engineering judgement	34
Coal combustion		Anthracite coal-fired hand-stoked boiler, commercial/residential	10300103	Polycyclic organic matter		97.5 lb/10E12 Btu heat input	Represents both gaseous and particulate POM	114
Coal combustion		Anthracite coal-fired gasoline feed boiler, commercial/residential	103001	Polycyclic organic matter		9.73 lb/ton10E12 Btu heat input	Same ref. lists 21.3 pg/J for same boiler/coal type, represents both gaseous and particulate POM	114
Coal combustion		Anthracite coal-fired underfeed stoker, commercial/residential	10300102	Polycyclic organic matter		22.36 lb/10E12 Btu heat input	Same ref. also lists 48.4 pg/J for same boiler/coal type, represents both gaseous & particulate POM	114
Coal combustion		Bituminous coal-fired hand stoked boiler, commercial/industrial	10300214	Polycyclic organic matter		4,273 lb/10E12 Btu heat input	Represents both gaseous and particulate POM	114
Coal combustion		Bituminous coal-fired gasoline feed, commercial/residential	103002	Polycyclic organic matter		2,432 lb/10E12 Btu heat input	Same ref. also lists 3926 pg/J for same boiler/coal type, represents both gaseous & particulate POM	114
Coal combustion		Bituminous coal-fired underfeed stoker, commercial/residential	10300208	Polycyclic organic matter		394.2 lb/10E12 Btu heat input	Same ref. also lists 1501 pg/J for same boiler/coal type, both represent particulate & gaseous POM	114
Coal combustion		Bituminous coal-fired underfeed stoker, commercial/residential	10300208	Polycyclic organic matter		4,042 lb/10E12 Btu heat input	Represents both gaseous and particulate POM	114
Coal combustion		High-volatile bituminous coal-fired underfeed stoker, commerc/resident	10300208	Polycyclic organic matter		9,446 lb/10E12 Btu heat input	Average of 6 values ranging from 363-9767 pg/J, represents both gaseous and particulate POM	114
Coal combustion		Processed lignite char underfeed stoker, commercial/residential	10300307	Polycyclic organic matter		373.3 lb/10E12 Btu heat input	Represents both gaseous and particulate POM	114
Coal combustion		Subbituminous coal-fired underfeed stoker, commercial/residential	10300224	Polycyclic organic matter		1,956 lb/10E12 Btu heat input	Average of 8 values ranging from 607-929 pg/J, represents both gaseous and particulate POM	114
Coal combustion	49	Flue gas, coal-fired boiler	101	2,3,7,8-Tetrachlorodibenzofuran		Not detectable	Pulverized coal, low sulfur, high ash, one location, detection limits ranged (0.06 - <1.1 ng/m3	119

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion	49	Flue gas, coal-fired boiler	101	2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	Not detectable	Pulverized coal, low sulfur, high ash, one location, detection limits ranged <5.4 - <6.8 ng/m3	119
Coal combustion	49	Fly ash, coal-fired boiler	101	Tetrachlorodibenzo-p-dioxins, total		Not detectable	Eight locations, controls unknown, detection limit 4 x 10E-9 lb/ton	119
Coal combustion	49	Stack - fly ash, coal-fired boiler	101	Tetrachlorodibenzo-p-dioxins, total		Not detectable	Low sulfur, high ash, one locaton, detection limit 1.2 x 10E-8 lb/ton	119
Coal combustion	4911	Boiler	1	Chlorine	7782505	2.44 lb/ton coal burned	Calculated from information in reference	133
Coal combustion	4911	Boiler	1	Hydrogen chloride	7647010	0.08-0.3 lbs/million Btu from coal		133
Coal combustion	4911	Boiler	1	Hydrogen chloride	7647010	0.00192 lb/ton coal burned	Control status unspecified	133
Coal combustion	4911	Industrial and commercial boilers	102002	Lead	7439921	907.4 lb/10E12 Btu	Uncontrolled, assumed use bituminous coal, calculated based on engineering judgement	34
Coal combustion	4911	Industrial and commercial boilers	102002	Lead	7439921	223.3 lb/10E12 Btu	Controlled, assumed use bituminous coal, calculated based on engineering judgement	34
Coal combustion	4911	Utility boiler	101002	Lead	7439921	907.4 lb/10E12 Btu	Uncontrolled, assumed use bituminous coal, calculated based on engineering judgement	34
Coal combustion	4911	Utility boiler	101002	Lead	7439921	29.37 lb/10E12 Btu	Controlled, assumed use bituminous coal, calculated based on engineering judgement	34
Coal combustion	4911	Cyclone utility boiler	101	Radionuclides		48.0 pCi U-238/10E6 Btu	Controlled with ESP	34
Coal combustion	4911	Cyclone utility boiler	101	Radionuclides		1787.0 pCi U-238/10E6 Btu	Controlled with scrubber, range = 301.2 - 3214.2 pCi U-238/10E6 Btu	34
Coal combustion	4911	Cyclone utility boiler	101	Radionuclides		40.0 pCi Th-232/10E6 Btu	Controlled with ESP	34
Coal combustion	4911	Cyclone utility boiler	101	Radionuclides		170.0 pCi Th-232/10E6 Btu	Controlled with scrubber, range 110.2-229.7 pCi Th-232/10E6 Btu	34
Coal combustion	4911	Cyclone utility boiler	101	Radionuclides		1.9 pCi U-238/g of PM emitted	Controlled with ESP, range 0.009-3.0 pCi U-238/g PM emitted	34
Coal combustion	4911	Cyclone utility boiler	101	Radionuclides		13.9 pCi U-238/g of PM emitted	Controlled with scrubber, range 0.017-37.8 pCi U-238/g PM emitted	34
Coal combustion	4911	Cyclone utility boiler	101	Radionuclides		1.8 pCi Th-232/g of PM emitted	Controlled with ESP	34
Coal combustion	4911	Cyclone utility boiler	101	Radionuclides		2.09 pCi Th-232/g of PM emitted	Controlled with scrubber, range 1.5-2.68 pCi Th-232/g of PM emitted	34

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion	4911	Pulverized coal dry bottom utility boiler	101	Radionuclides		295.3 pCi U-238/10E6 Btu	Range 6.3 to 679.9 pCi U-238/10E6 Btu, controlled with ESP	36
Coal combustion	4911	Pulverized coal dry bottom utility boiler	101	Radionuclides		22.5 pCi U-238/10E6 Btu	Controlled with ESP and scrubber	36
Coal combustion	4911	Pulverized coal dry bottom utility boiler	101	Radionuclides		73.7 pCi U-238/10E6 Btu	Controlled with scrubber	36
Coal combustion	4911	Pulverized coal dry bottom utility boiler	101	Radionuclides		170.9 pCi Th-232/10E6 Btu	Controlled with ESP, range 50.3-180.7 pCi Th-232/10E6 Btu	36
Coal combustion	4911	Pulverized coal dry bottom utility boiler	101	Radionuclides		22.7 pCi Th-232/10E6 Btu	Controlled with ESP and scrubber	36
Coal combustion	4911	Pulverized coal dry bottom utility boiler	101	Radionuclides		36.9 pCi Th-232/10E6 Btu	Controlled with scrubber	36
Coal combustion	4911	Pulverized coal dry bottom utility boiler	101	Radionuclides		6.55 pCi U-238/g of PM emitted	Controlled with ESP, range 3.3-9.2 pCi U-238/g of PM emitted	36
Coal combustion	4911	Pulverized coal dry bottom utility boiler	101	Radionuclides		7.1 pCi U-238/g of PM emitted	Controlled with scrubber and ESP	36
Coal combustion	4911	Pulverized coal dry bottom utility boiler	101	Radionuclides		9.6 pCi U-238/g of PM emitted	Controlled with scrubber	36
Coal combustion	4911	Pulverized coal dry bottom utility boiler	101	Radionuclides		3.0 pCi Th-232/g of PM emitted	Controlled with ESP, range 0.6-8.3 pCi Th-232/g of PM emitted	36
Coal combustion	4911	Pulverized coal dry bottom utility boiler	101	Radionuclides		7.14 pCi Th-232/g of PM emitted	Controlled with ESP and scrubber	36
Coal combustion	4911	Pulverized coal dry bottom utility boiler	101	Radionuclides		3.78 pCi Th-232/g of PM emitted	Controlled with scrubber	36
Coal combustion	4911	Pulverized coal slag bottom utility boiler	101002	Radionuclides		0.004 pCi U-238/g of PM emitted	Controlled with mechanical col. and ESP	36
Coal combustion	4911	Stoker utility boiler	101	Radionuclides		13.8 pCi U-238/10E6 Btu	Controlled with ESP	36
Coal combustion	4911	Stoker utility boiler	101	Radionuclides		13.8 pCi Th-232/10E6 Btu	Controlled with ESP	36
Coal combustion	4911	Stoker utility boiler	101	Radionuclides		0.003 pCi U-238/g of PM emitted	Controlled with fabric filter	36
Coal combustion	4911	Stoker utility boiler	101	Radionuclides		0.8 pCi U-238/g of PM emitted	Controlled with ESP	36
Coal combustion	4911	Stoker utility boiler	101	Radionuclides		0.8 pCi Th-232/g of PM emitted	Controlled with ESP	36

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion	4911	Utility boiler	101	Radionuclides		3.0 -17.2 pCi of U238/kg coal burned	Calculated from information in reference	35
Coal combustion	4911	Utility boiler	1	Radionuclides		9 pCi U-238/g fly ash		37
Coal combustion	4911	Utility boiler	1	Radionuclides		4 pCi Th-232/g fly ash		37
Coal combustion, commercial		Stoker boilers	103	Selenium	7782492	195.4 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	54
Coal combustion, commercial		Stoker boilers	103	Vanadium	7440622	134.7 lb/10E12 Btu	Uncontrolled, based on reported emissions and engineering judgement	54
Coal combustion, industrial		Pulverized stoker watertube boiler	10200202	Arsenic	7440382	0.0079 lbs/10E6 BTU heat input	Uncontrolled emissions	189
Coal combustion, industrial		Underfeed stoker watertube boiler	10200206	Arsenic	7440382	0.0079 lbs/10E6 BTU heat input	Uncontrolled emissions	189
Coal combustion, industrial		Chaingrate stoker watertube boiler	102002	Arsenic	7440382	0.0079 lbs/10E6 BTU heat input	Uncontrolled emissions	189
Coal combustion, industrial		Spreader stoker watertube boiler	10200204	Arsenic	7440382	0.0079 lbs/10E6 BTU heat input	Uncontrolled emissions	189
Coal combustion, industrial		Pulverized stoker watertube boiler	10200202	Cadmium	7440439	0.00046 lbs/10E6 BTU heat input	Uncontrolled emissions	189
Coal combustion, industrial		Underfeed stoker watertube boiler	10200206	Cadmium	7440439	0.00046 lbs/10E6 BTU heat input	Uncontrolled emissions	189
Coal combustion, industrial		Chaingrate stoker watertube boiler	102002	Cadmium	7440439	0.00046 lbs/10E6 BTU heat input	Uncontrolled emissions	189
Coal combustion, industrial		Spreader stoker watertube boiler	10200204	Cadmium	7440439	0.00046 lbs/10E6 BTU heat input	Uncontrolled emissions	189
Coal combustion, industrial		Bituminous coal industrial boiler	102002	Hydrogen chloride	7647010	78.8 lbs/10E9 BTU	Based on rate of production	181
Coal combustion, industrial		Antracite coal industrial boiler	102001	Hydrogen chloride	7647010	35.5 lbs/10E9 BTU	Based on rate of production	181
Coal combustion, industrial		Lignite coal industrial boiler	102003	Hydrogen chloride	7647010	1.0 lbs/10E9 BTU	Based on rate of production	181
Coal combustion, industrial		Lignite coal-fired boilers	102003	Hydrogen fluoride	7664393	1.2 lbs/10E9 BTU	Based upon rate of production	181
Coal combustion, industrial		Anthracite coal-fired boilers	102001	Hydrogen fluoride	7664393	7.2 lbs/10E9 BTU	Based upon rate of production	181

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion, industrial		Bituminous coal-fired boilers	102002	Hydrogen fluoride	7664393	9.4 lbs/10E9 BTU	Based upon rate of production	181
Coal combustion, industrial		Pulverized coal watertube boiler	10200202	Lead	7439921	0.0086 lbs/10E6 BTU heat input	Uncontrolled emissions	189
Coal combustion, industrial		Spreader stoker watertube boiler	10200204	Lead	7439921	0.0086 lbs/10E6 BTU heat input	Uncontrolled emissions	189
Coal combustion, industrial		Chaingrate stoker watertube boiler	102002	Lead	7439921	0.0086 lbs/10E6 BTU heat input	Uncontrolled emissions	189
Coal combustion, industrial		Underfeed stoker watertube boiler	10200206	Lead	7439921	0.0086 lbs/10E6 BTU heat input	Uncontrolled emissions	189
Coal combustion, industrial		Bituminous coal-fired pulverized dry bottom, water tube boilers	10200202	Polycyclic organic matter		2.78 lb/10E12 Btu	Multicyclones, represents primarily particulate POM	114
Coal combustion, industrial		Bituminous coal-fired pulverized wet bottom boilers	10200201	Polycyclic organic matter		4.49 lb/10E12 Btu	Cyclones/ESP, represents both gaseous and particulate POM	114
Coal combustion, industrial		Dry bottom, horizontally-fired, pulverized bituminous coal	10200201	Polycyclic organic matter		120.0 lb/10E12 Btu	ESP, represents both gaseous and particulate POM	114
Coal combustion, industrial		Mass-fired overfeed stoker, bituminous coal	10200209	Polycyclic organic matter		32.92 lb/10E12 Btu	Uncontrolled, represents both gaseous and particulate POM	114
Coal combustion, industrial		Spreader stoker	10200204	Polycyclic organic matter		3.014 lb/10E12 Btu	Multiclones, coal type not given, represents mostly particulate POM	114
Coal combustion, industrial		Underfeed stoker	10200206	Polycyclic organic matter		196.4 lb/10E12 Btu	Uncontrolled, coal type not given, represents mostly particulate POM	114
Coal combustion, industrial		Watertube, pulverized bituminous coal	10200202	Polycyclic organic matter		67.94 lb/10E12 Btu	ESP, represents both gaseous and particulate POM	114
Coal combustion, industrial		Bituminous coal-fired boilers	102002	Selenium	7782492	0.0032 lb/ton coal	222 GJ/hr boiler, sampling and test data, controlled	17
Coal combustion, industrial		Pulverized boiler	102	Selenium	7782492	112.7 lb/10E12 Btu	Controlled by multiclones, based on reported emissions data and engineering judgement	94
Coal combustion, industrial		Pulverized boiler	102	Selenium	7782492	98.07 lb/10E12 Btu	Controlled by scrubber, based on reported emissions data and engineering judgement	94
Coal combustion, industrial		Stoker boiler	102	Selenium	7782492	83.71 lb/10E12 Btu	Controlled by multiclones, based on reported emissions data and engineering judgement	94

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion, industrial		Stoker boiler	102	Selenium	7782492	195.4 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	54
Coal combustion, industrial		Pulverized boiler	102	Vanadium	7440622	76.52 lb/10E12 Btu	Controlled by multicyclones, based on reported emissions and engineering judgement	54
Coal combustion, industrial		Pulverized boiler	102	Vanadium	7440622	55.65 lb/10E12 Btu	Controlled by scrubber, based on reported emissions and engineering judgement	54
Coal combustion, industrial		Stoker boilers	102	Vanadium	7440622	57.74 lb/10E12 Btu	Controlled by multicyclones, based on reported emissions and engineering judgement	54
Coal combustion, industrial		Stoker boilers	102	Vanadium	7440622	134.7 lb/10E12 Btu	Uncontrolled, based on reported emissions and engineering judgement	54
Coal combustion, residential		Anthracite coal-fired boilers		Arsenic	7440382	493 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	34
Coal combustion, residential		Bituminous coal-fired boilers		Arsenic	7440382	1140 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	34
Coal combustion, residential		Boilers fired by coal from appalachian region		Arsenic	7440382	1440 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Coal combustion, residential		Boilers fired by coal from interior region		Arsenic	7440382	1120 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Coal combustion, residential		Boilers fired by coal from northern plains region		Arsenic	7440382	825 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Coal combustion, residential		Boilers fired by coal from rocky mountain region		Arsenic	7440382	392 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Coal combustion, residential		Lignite coal-fired boilers		Arsenic	7440382	3380 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	34
Coal combustion, residential		Subbituminous coal-fired boilers		Arsenic	7440382	484 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	34
Coal combustion, residential		Anthracite coal-fired boilers		Beryllium	7440417	10.4 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	34
Coal combustion, residential		Bituminous coal-fired boilers		Beryllium	7440417	17.0 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	34
Coal combustion, residential		Boilers fired by coal from appalachian region		Beryllium	7440417	19.8 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Coal combustion, residential		Boilers fired by coal from interior region		Beryllium	7440417	20.9 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion, residential		Boilers fired by coal from northern plains region		Beryllium	7440417	13.6 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion, residential		Boilers fired by coal from rocky mountain region		Beryllium	7440417	15.2 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion, residential		Lignite coal-fired boilers		Beryllium	7440417	27.5 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	36
Coal combustion, residential		Subbituminous coal-fired boilers		Beryllium	7440417	13.6 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	36
Coal combustion, residential		Anthracite coal-fired boilers		Cadmium	7440439	13.0 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	36
Coal combustion, residential		Bituminous coal-fired boilers		Cadmium	7440439	52.2 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	36
Coal combustion, residential		Boilers fired by coal from appalachian region		Cadmium	7440439	9.4 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion, residential		Boilers fired by coal from interior region		Cadmium	7440439	375 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion, residential		Boilers fired by coal from northern plains region		Cadmium	7440439	24.9 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion, residential		Lignite coal-fired boilers		Cadmium	7440439	97.3 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	36
Coal combustion, residential		Subbituminous coal-fired boilers		Cadmium	7440439	29.8 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	36
Coal combustion, residential		Anthracite coal-fired boilers		Chromium	7440473	372 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	36
Coal combustion, residential		Bituminous coal-fired boilers		Chromium	7440473	157 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	36
Coal combustion, residential		Boilers fired by coal from appalachian region		Chromium	7440473	157 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion, residential		Boilers fired by coal from interior region		Chromium	7440473	348 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion, residential		Boilers fired by coal from northern plains region		Chromium	7440473	83.3 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion, residential		Boilers fired by coal from rocky mountain region		Chromium	7440473	218 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion, residential		Lignite coal-fired boilers		Chromium	7440473	188 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	36
Coal combustion, residential		Subbituminous coal-fired boilers		Chromium	7440473	156 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	36
Coal combustion, residential		Anthracite coal-fired boilers		Copper	7440508	129 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	36
Coal combustion, residential		Bituminous coal-fired boilers		Copper	7440508	136 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	36
Coal combustion, residential		Boilers fired by coal from appalachian region		Copper	7440508	157 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion, residential		Boilers fired by coal from interior region		Copper	7440508	140 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion, residential		Boilers fired by coal from northern plains region		Copper	7440508	109 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion, residential		Boilers fired by coal from rocky mountain region		Copper	7440508	183 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Coal combustion, residential		Lignite coal-fired boilers		Copper	7440508	239 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	36
Coal combustion, residential		Subbituminous coal-fired boilers		Copper	7440508	148 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	36
Coal combustion, residential		Bituminous coal residential boiler		Hydrogen chloride	7647010	60.5 lbs/10E9 BTU		181
Coal combustion, residential		Anthracite coal residential boiler		Hydrogen chloride	7647010	120 lbs/10E9 BTU		181
Coal combustion, residential		Lignite coal residential boiler		Hydrogen chloride	7647010	35.1 lbs/10E9 BTU		181
Coal combustion, residential		Lignite coal-fired boilers		Hydrogen fluoride	7664393	6.34 lbs/10E9 BTU		181
Coal combustion, residential		Anthracite coal-fired boilers		Hydrogen fluoride	7664393	4.98 lbs/10E9 BTU		181

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion, residential		Bituminous coal-fired boilers		Hydrogen fluoride	7664393	4.87 lbs/10E9 BTU		181
Coal combustion, residential		Anthracite coal-fired boilers		Manganese	7439965	790 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Coal combustion, residential		Bituminous coal-fired boilers		Manganese	7439965	740 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Coal combustion, residential		Boilers fired by coal from appalachian region		Manganese	7439965	840 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Coal combustion, residential		Boilers fired by coal from interior region		Manganese	7439965	910 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Coal combustion, residential		Boilers fired by coal from northern plains region		Manganese	7439965	1100 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Coal combustion, residential		Boilers fired by coal from rocky mountain region		Manganese	7439965	2250 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Coal combustion, residential		Lignite coal-fired boilers		Manganese	7439965	4200 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Coal combustion, residential		Subbituminous coal-fired boilers		Manganese	7439965	1000 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Coal combustion, residential		Anthracite coal-fired boilers		Mercury	7439976	12.2 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	34
Coal combustion, residential		Bituminous coal-fired boilers		Mercury	7439976	20.7 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	34
Coal combustion, residential		Boilers fired by coal from appalachian region		Mercury	7439976	16.0 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Coal combustion, residential		Boilers fired by coal from interior region		Mercury	7439976	10.5 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Coal combustion, residential		Boilers fired by coal from northern plains region		Mercury	7439976	18.1 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Coal combustion, residential		Boilers fired by coal from rocky mountain region		Mercury	7439976	20.8 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Coal combustion, residential		Lignite coal-fired boilers		Mercury	7439976	10.0 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	34

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion, residential		Subbituminous coal-fired boilers		Mercury	7439976	12.8 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	34
Coal combustion, residential		Anthracite coal-fired boilers		Nickel	7440020	224 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	34
Coal combustion, residential		Bituminous coal-fired boilers		Nickel	7440020	129 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	34
Coal combustion, residential		Boilers fired by coal from appalachian region		Nickel	7440020	133 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Coal combustion, residential		Boilers fired by coal from interior region		Nickel	7440020	244 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Coal combustion, residential		Boilers fired by coal from northern plains region		Nickel	7440020	107 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Coal combustion, residential		Boilers fired by coal from rocky mountain region		Nickel	7440020	90.6 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Coal combustion, residential		Lignite coal-fired boilers		Nickel	7440020	116 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	34
Coal combustion, residential		Subbituminous coal-fired boilers		Nickel	7440020	73.8 lb/10E12 Btu	Uncontrolled, highly variable, calculated based on engineering judgement	34
Coal combustion, residential		Anthracite coal-fired furnaces		Selenium	7782492	230.2 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	94
Coal combustion, residential		Bituminous coal-fired furnaces		Selenium	7782492	331.4 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	94
Coal combustion, residential		Lignite coal-fired furnaces		Selenium	7782492	119.6 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	94
Coal combustion, residential		Anthracite coal-fired boilers		Vanadium	7440622	193.9 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	94
Coal combustion, residential		Bituminous coal-fired boilers		Vanadium	7440622	144.5 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	94
Coal combustion, residential		Lignite coal-fired boilers		Vanadium	7440622	79.77 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	94
Coal combustion, residential	4911	Residential boilers		Lead	7439921	810.0 lb/10E12 Btu	Uncontrolled, ceased use anthracite coal, calculated based on engineering judgement	34
Coal combustion, utility	491	Bituminous coal-fired boilers	101002	Sulfuric acid	7664939	4.4 x S sulfur in fuel ng/J	Controlled emissions, FGD system with 90% efficiency for sulfuric acid mist	213

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SIC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion, utility	491	Bituminous coal-fired boilers	101002	Sulfuric acid	7664939	0.8 x S sulfur in fuel ng/J	Uncontrolled emissions	213
Coal combustion, utility	4911	Bituminous coal-fired cyclone utility boiler	101002	Hydrogen chloride	7647010	78.8 lbs/10E9 BTU	Based on rate of production	181
Coal combustion, utility	4911	Anthracite coal utility boiler	101001	Hydrogen chloride	7647010	35.5 lbs/10E9 BTU	Based on rate of production	181
Coal combustion, utility	4911	Lignite coal utility boiler	101003	Hydrogen chloride	7647010	1.0 lbs/10E9 BTU	Based on rate of production	181
Coal combustion, utility	4911	Lignite coal-fired boilers	101003	Hydrogen fluoride	7664393	1.2 lbs/10E9 BTU	Based upon rate of production	181
Coal combustion, utility	4911	Anthracite coal-fired boilers	101001	Hydrogen fluoride	7664393	7.2 lbs/10E9 BTU	Based upon rate of production	181
Coal combustion, utility	4911	Bituminous coal-fired boilers	101002	Hydrogen fluoride	7664393	9.4 lbs/10E9 BTU	Based upon rate of production	181
Coal combustion, utility	4911	Coal-fired boiler, flue gas	101	Polychlorinated dibenzofurans, total		Not detectable	Four locations, 5-day composites, detection limits vary from 2 x 10E-7 - 1.4 x 10E-6 lb/ton	119
Coal combustion, utility	4911	Coal-fired boiler, fly ash	101	Polychlorinated dibenzofurans, total		Not detectable	Four locations, 5-day composites, detection limits vary from 2 x 10 E-7 - 1.4 x 10E-6 lb/ton	119
Coal combustion, utility	4911	Coal-fired boiler, fly ash	101	Polychlorinated dibenzo-p-dioxins, total		Not detectable	Four locations, 5-day composites, detection limits vary from 2 x 10E-7 - 1.4 x 10E-6 lb/ton	119
Coal combustion, utility	4911	Utility boiler, flue gas	101	Polychlorinated dibenzo-p-dioxins, total		Not detectable	Four locations, 5-day composites, detection limits vary from 2 x 10E-7 - 1.4 x 10E-6 lb/ton	119
Coal combustion, utility	4911	Bituminous coal-fired cyclone utility boiler	10100201	Polycyclic organic matter		2.040 lb/10E12 Btu heat input	ESP, represents both gaseous and particulate POM	114
Coal combustion, utility	4911	Bituminous coal-fired cyclone utility boiler	10100203	Polycyclic organic matter		16.2 lb/10E12 Btu heat input	Wet scrubber, represents both particulate and gaseous POM	114
Coal combustion, utility	4911	Bituminous coal-fired pulverized dry bottom boilers	10100202	Polycyclic organic matter		8.93 lb/10E12 Btu	Wet scrubber, represents both gaseous and particulate POM	114
Coal combustion, utility	4911	Bituminous coal-fired pulverized dry bottom boilers	10100202	Polycyclic organic matter		18.9 lb/10E12 Btu	Multiclone/ESP, represents both gaseous and particulate POM	114
Coal combustion, utility	4911	Bituminous coal-fired pulverized wet bottom boilers	10100201	Polycyclic organic matter		18.9 lb/10E12 Btu	ESP, represents both gaseous and particulate POM	114

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion, utility	4911	Bituminous coal-fired pulverized wet bottom boilers	10100201	Polycyclic organic matter		543.7 lb/10E12 Btu	Wet scrubber, represents both gaseous and particulate POM	114
Coal combustion, utility	4911	Front wall-fired boilers, pulverized bituminous coal	10100201	Polycyclic organic matter		1.69 lb/10E12 Btu heat input	ESP, represents both gaseous and particulate POM	114
Coal combustion, utility	4911	Lignite coal-fired spreader stoker boilers, util/commerc/industr	10100304	Polycyclic organic matter		14.6 lb/10E12 Btu	Multiclone, represents both gaseous and particulate POM	114
Coal combustion, utility	4911	Pulverized dry bottom, tangentially fired boilers	10100212	Polycyclic organic matter		2.20 lb/10E12 Btu heat input	Multiclone/ESP, represents mostly particulate POM	114
Coal combustion, utility	4911	Pulverized dry bottom, vertically fired boilers	10100202	Polycyclic organic matter		0.742 - 9.73 lb/10E12 Btu	Uncontrolled, represents mostly particulate POM	114
Coal combustion, utility	4911	Pulverized dry bottom, vertically fired boilers	10100202	Polycyclic organic matter		0.698 - 1.62 lb/10E12 Btu heat input	Multiclone/ESP, represents mostly particulate POM	114
Coal combustion, utility	4911	Stoker spreader, traveling grate	10100205	Polycyclic organic matter		0.129 - 0.463 lb/10E12 Btu heat input	Multiclone, coal type not reported, represents mostly particulate POM	114
Coal combustion, utility	4911	Tangentially-fired boilers, pulverized subbituminous	10100224	Polycyclic organic matter		0.695 lb/10E12 Btu heat input	ESP controlled, represents both particulate and gaseous POM	114
Coal combustion, utility	4911	Vertically fired boilers, pulverized subbituminous	10100201	Polycyclic organic matter		6.49 lb/10E12 Btu heat input	ESP controlled, represents both particulate and gaseous POM	114
Coal combustion, utility	4911	Bituminous coal-fired cyclone boiler, util/commerc/industr	10100203	Selenium	7782492	3.24 lb/10E12 Btu	Controlled by ESP, based on reported emissions data and engineering judgement	94
Coal combustion, utility	4911	Bituminous coal-fired cyclone boiler, util/commerc/industr	10100203	Selenium	7782492	76.8 lb/10E12 Btu	Controlled by scrubber, based on reported emissions data and engineering judgement	94
Coal combustion, utility	4911	Bituminous coal-fired pulverized dry bottom boilers	10100202	Selenium	7782492	30.14 lb/10E12 Btu	Controlled by ESP, based on reported emissions data and engineering judgement	94
Coal combustion, utility	4911	Bituminous coal-fired pulverized dry bottom boilers	10100202	Selenium	7782492	37.79 lb/10E12 Btu	Controlled by scrubber, based on reported emissions data and engineering judgement	94
Coal combustion, utility	4911	Bituminous coal-fired pulverized dry bottom boilers	10100202	Selenium	7782492	373.35 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	94

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion, utility	4911	Bituminous coal-fired pulverized wet bottom boilers	10100201	Selenium	7782492	24.34 lb/10E12 Btu	Controlled by ESP, based on reported emissions data and engineering judgement	54
Coal combustion, utility	4911	Bituminous coal-fired stoker boilers	101002	Selenium	7782492	83.71 lb/10E12 Btu	Controlled by multicyclones, based on reported emissions data and engineering judgement	54
Coal combustion, utility	4911	Cyclone boiler, lignite coal	10100303	Selenium	7782492	7.18 lb/10E12 Btu	Controlled by ESP, based on reported emissions data and engineering judgement	54
Coal combustion, utility	4911	Cyclone boiler, lignite coal	10100303	Selenium	7782492	7.88 lb/10E12 Btu	Controlled by multicyclones, based on reported emissions data and engineering judgement	54
Coal combustion, utility	4911	Lignite coal-fired stoker boilers	101003	Selenium	7782492	83.71 lb/10E12 Btu	Controlled by multicyclones, based on reported emissions data and engineering judgement	54
Coal combustion, utility	4911	Pulverized boiler, anthracite coal	10100101	Selenium	7782492	30.14 lb/10E12 Btu	Controlled by ESP, based on reported emissions data and engineering judgement	54
Coal combustion, utility	4911	Pulverized dry bottom boiler, lignite coal	10100301	Selenium	7782492	13.21 lb/10E12 Btu	Controlled by ESP, based on reported emissions data and engineering judgement	54
Coal combustion, utility	4911	Pulverized wet bottom boiler, lignite coal	10100301	Selenium	7782492	10.66 lb/10E-12 Btu	Controlled by ESP, based on reported emissions data and engineering judgement	54
Coal combustion, utility	4911	Stoker boiler, anthracite coal	10100102	Selenium	7782492	83.71 lb/10E12 Btu	Controlled by multicyclones, based on reported emissions data and engineering judgement	54
Coal combustion, utility	4911	Anthracite coal-fired pulverized boilers	10100101	Vanadium	7440622	92.29 lb/10E12 Btu	Controlled by ESP, based on reported emissions data and engineering judgement	54
Coal combustion, utility	4911	Anthracite coal-fired stoker boilers	10100102	Vanadium	7440622	57.74 lb/10E12 Btu	Controlled by multicyclones, based on reported emissions data and engineering judgement	54
Coal combustion, utility	4911	Bituminous coal-fired cyclone boilers	10100203	Vanadium	7440622	69.80 lb/10E12 Btu	Controlled by ESP, based on reported emissions data and engineering judgement	54
Coal combustion, utility	4911	Bituminous coal-fired cyclone boilers	10100203	Vanadium	7440622	69.5 lb/10E12 Btu	Controlled by scrubber, based on reported emissions data and engineering judgement	54
Coal combustion, utility	4911	Bituminous coal-fired pulverized dry bottom boilers	10100202	Vanadium	7440622	91.3 lb/10E12 Btu	Controlled by ESP, based on reported emissions data and engineering judgement	54
Coal combustion, utility	4911	Bituminous coal-fired pulverized dry bottom boilers	10100202	Vanadium	7440622	145.6 lb/10E12 Btu	Controlled by scrubber, based on reported emissions data and engineering judgement	54
Coal combustion, utility	4911	Bituminous coal-fired pulverized dry bottom boilers	10100202	Vanadium	7440622	255.0 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	54

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coal combustion, utility	4911	Bituminous coal-fired pulverized wet bottom boilers	10100202	Vanadium	7440622	74.90 lb/10E12 Btu	Controlled by ESP, based on reported emissions data and engineering judgement	54
Coal combustion, utility	4911	Bituminous coal-fired stoker boilers	101002	Vanadium	7440622	57.74 lb/10E12 Btu	Controlled by multicyclones, based on reported emissions data and engineering judgement	54
Coal combustion, utility	4911	Lignite coal-fired cyclone boilers	10100303	Vanadium	7440622	540.3 lb/10E12 Btu	Controlled by ESP, based on reported emissions data and engineering judgement	54
Coal combustion, utility	4911	Lignite coal-fired cyclone boilers	10100303	Vanadium	7440622	674.8 lb/10E12 Btu	Controlled by multicyclones, based on reported emissions data and engineering judgement	54
Coal combustion, utility	4911	Lignite coal-fired pulverized dry bottom boilers	10100301	Vanadium	7440622	40.58 lb/10E12 Btu	Controlled by ESP, based on reported emissions data and engineering judgement	54
Coal combustion, utility	4911	Lignite coal-fired pulverized wet bottom boilers	10100301	Vanadium	7440622	33.92 lb/10E12 Btu	Controlled by ESP, based on reported emissions data and engineering judgement	54
Coal combustion, utility	4911	Lignite coal-fired stoker boilers	101003	Vanadium	7440622	57.74 lb/10E12 Btu	Controlled by multicyclones, based on reported emissions data and engineering judgement	54
Coal refuse pile burning	12	Refuse pile	50300204	Ammonia	7664417	8.6 x 10E-5 lb/hr/ton burning coal refuse		134
Coal refuse pile burning	12	Refuse pile	50300204	Hydrogen sulfide	7783064	6 x 10E-4 lb/hr/ton burning coal refuse		134
Coal refuse pile burning	12	Refuse pile	50300204	Mercury	7439976	9.2 x 10E-9 lb/hr/ton burning coal refuse		134
Coffee bean roasting	2095	Continuous bean roaster	30200201	Acetaldehyde	75070	0.046 lb/ton beans roasted	Uncontrolled, average of 3 tests	130
Coffee bean roasting	2095	Continuous bean roaster	30200201	Acetaldehyde	75070	0.0164 lb/ton beans roasted	Controlled with afterburner, average of 2 tests	130
Coffee bean roasting	2095	Continuous roasting	30200201	Acrolein	107028	0.076 lb/ton beans roasted	Uncontrolled	140
Coffee bean roasting	2095	Continuous roasting	30200201	Acrolein	107028	0.032 lb/ton beans roasted	Afterburner	140
Coke by-product plants	4925	Open-ended lines	303003	Benzene	71432	0.089 lb/day	Uncontrolled fugitive emissions, avg. value, range is 0.006 - 0.093 lb/day	171
Coke by-product plants	4925	Sampling connections	303003	Benzene	71432	0.60 lb/day	Uncontrolled fugitive emissions, avg. value, range is 0.57 - 0.62 lb/day	171

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coke by-product plants	4925	Pressure relief devices	303003	Benzene	71432	4.9 lb/day	Uncontrolled fugitive emissions, avg. value, range is 4.17 - 6.83 lb/day	171
Coke by-product plants	4925	Exhausters	303003	Benzene	71432	0.58 lb/day	Uncontrolled fugitive emissions, avg. value, range is 0.55 - 0.62 lb/day	171
Coke by-product plants	4925	Pumps	303003	Benzene	71432	4.4 lb/day	Uncontrolled fugitive emissions, avg. value, range is 4.2 - 4.6 lb/day	171
Coke by-product plants	4925	Valves	303003	Benzene	71432	0.42 lb/day	Uncontrolled fugitive emissions, avg. value, range is 0.40 - 0.44 lb/day	171
Coke by-product plants	4925	Wash-oil circulation tank	303003	Benzene	71432	4.6 lb/day	Uncontrolled fugitives	171
Coke by-product plants	4925	Wash-oil decanter	303003	Benzene	71432	0.004 lb/ton coke	Uncontrolled	171
Coke by-product plants	4925	Excess-ammonia liquor tank	303003	Benzene	71432	0.013 lb/ton coke	Uncontrolled	171
Coke by-product plants	4925	Flushing-liquor circulation tank	303003	Benzene	71432	0.013 lb/ton coke	Uncontrolled	171
Coke by-product plants	4925	Benzene storage	303003	Benzene	71432	0.006 lb/ton coke	Uncontrolled	171
Coke by-product plants	4925	BTX storage	303003	Benzene	71432	0.006 lb/ton coke	Uncontrolled	171
Coke by-product plants	4925	Light-oil storage	303003	Benzene	71432	0.006 lb/ton coke	Uncontrolled	171
Coke by-product plants	4925	Light-oil sump	303003	Benzene	71432	0.016 lb/ton coke	Uncontrolled	171
Coke by-product plants	4925	Tar storage	303003	Benzene	71432	0.011 lb/ton coke	Uncontrolled	171
Coke by-product plants	4925	Tar decanter	303003	Benzene	71432	0.072 lb/ton coke	Uncontrolled	171
Coke by-product plants	4925	Tar dewatering	303003	Benzene	71432	0.019 lb/ton coke	Uncontrolled	171
Coke by-product plants	4925	Tar-intercepting sump	303003	Benzene	71432	0.09 lb/ton coke	Uncontrolled	171
Coke by-product plants	4925	Light-oil condenser vent	303003	Benzene	71432	0.096 lb/ton coke	Uncontrolled	171
Coke by-product plants	4925	Naphthalene separation and processing	303003	Benzene	71432	0.198 lb/ton coke	Uncontrolled	171
Coke by-product plants	4925	Cooling tower, tar bottom	303003	Benzene	71432	0.102 lb/ton coke	Uncontrolled	171
Coke by-product plants	4925	Cooling tower, direct water	303003	Benzene	71432	0.394 lb/ton coke	Uncontrolled	171
Coke oven gas combustion	3312	Boiler emission stream	39000703	Benzene	71432	0.42% by vol (1.90% by wt) of total VOC	Uncontrolled	132

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INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coke production	3312	Coke oven battery	303003	Manganese	7439965	0.026 lb/ton coal burned	Based on engineering estimates	13
Coke production	3312	Coke oven	303003	Nickel	7440020	0.0016 lb/ton of coal processed	Uncontrolled, basis unclear	110
Coke production	3312	Coke oven	303003	Toluene	108883	0.48 lb/ton coke produced		13
Coke production	332	Quenching (contaminated water)	303003	Ammonia	7664417	0.28 lbs/ton coal charged	Sources emitting > 100 tons NH3/year, emission factor rating B	179
Coke production, by-product recovery process	3312	Coke pushing	30300303	Ammonia	7664417	0.1 lb/ton coal charged	Uncontrolled, sources emitting >100 tons NH3/year	97, 179
Coke production, by-product recovery process	3312	Door leaks	30300308	Ammonia	7664417	0.06 lb/ton coal charged	Uncontrolled, sources emitting >100 tons NH3/year	97, 179
Coke production, by-product recovery process	3312	Wet coal charging larry car	30300302	Ammonia	7664417	0.02 lb/ton coal charged	Uncontrolled, sources emitting >100 tons NH3/year	97, 179
Coke production, by-product recovery process	3312	BTX storage	407	Benzene	71432	0.0116 lb/ton coke produced	Uncontrolled	132
Coke production, by-product recovery process	3312	BTX storage	407	Benzene	71432	2.4 x 10E-4 lb/ton coke produced	Coke oven gas blanketing from gas holder, 98% efficiency	132
Coke production, by-product recovery process	3312	BTX storage	407	Benzene	71432	1.16 x 10E-3 lb/ton coke produced	Wash-oil scrubber, 90% efficiency	132
Coke production, by-product recovery process	3312	Benzene storage	407	Benzene	71432	0.0116 lb/ton coke produced	Uncontrolled	132
Coke production, by-product recovery process	3312	Benzene storage	407	Benzene	71432	2.4 x 10E-4 lb/ton coke produced	Controlled, nitrogen or natural gas blanketing system, 98% efficiency	132
Coke production, by-product recovery process	3312	Benzene storage	407	Benzene	71432	1.16 x 10E-3 lb/ton coke produced	Wash-oil scrubber, 90% efficiency	132
Coke production, by-product recovery process	3312	Cooling tower, direct water	303003	Benzene	71432	0.94 lb/ton coke produced	Uncontrolled, based on information in BID for Benzene Rule, from Coke By-product Recovery Plants	132
Coke production, by-product recovery process	3312	Cooling tower, direct water	303003	Benzene	71432	0.102 lb/ton coke produced	Controlled, use tar bottom final cooler, BIE control efficiency	132

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coke production, by-product recovery process	3312	Cooling tower, direct water	303003	Benzene	71432	Negligible	Use wash oil final cooler, 100% efficiency	132
Coke production, by-product recovery process	3312	Cooling tower, tar bottom	303003	Benzene	71432	0.140 lb/ton coke produced	Uncontrolled	132
Coke production, by-product recovery process	3312	Cooling tower, tar bottom	303003	Benzene	71432	Negligible	Use wash oil final cooler, 100% efficiency	132
Coke production, by-product recovery process	3312	Excess-ammonia liquor tank	303003	Benzene	71432	0.018 lb/ton coke produced	Uncontrolled	132
Coke production, by-product recovery process	3312	Excess-ammonia liquor tank	303003	Benzene	71432	3.6 x 10E-4 lb/ton coke produced	Coke oven gas blanketing from collecting main, 98% efficiency	132
Coke production, by-product recovery process	3312	Flushing-liquor circulation tank	303003	Benzene	71432	0.018 lb/ton coke produced	Uncontrolled	132
Coke production, by-product recovery process	3312	Flushing-liquor circulation tank	303003	Benzene	71432	3.6 x 10E-4 lb/ton coke produced	Coke oven gas blanketing from collecting main, 98% efficiency	132
Coke production, by-product recovery process	3312	Light-oil condenser vent	303003	Benzene	71432	0.178 lb/ton coke produced	Uncontrolled	132
Coke production, by-product recovery process	3312	Light-oil condenser vent	303003	Benzene	71432	0.0036 lb/ton coke produced	Coke oven gas blanketing from gas holder, 98% efficiency	132
Coke production, by-product recovery process	3312	Light-oil storage	407	Benzene	71432	0.0116 lb/ton coke produced	Uncontrolled	132
Coke production, by-product recovery process	3312	Light-oil storage	407	Benzene	71432	2.4 x 10E-4 lb/ton coke produced	Controlled, coke oven gas blanketing from gas holder, 98% efficiency	132
Coke production, by-product recovery process	3312	Light-oil storage	407	Benzene	71432	1.16 x 10E-2 lb/ton coke produced	Used-oil scrubber, 90% efficiency	132
Coke production, by-product recovery process	3312	Light-oil sump	303003	Benzene	71432	0.03 lb/ton coke produced	Uncontrolled	132

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coke production, by-product recovery process	3312	Light-oil sump	303003	Benzene	71432	4 x 10E-^ lb/ton coke produced	Controlled, source enclosure, 98% efficiency	132
Coke production, by-product recovery process	3312	Naphthalene processing	303003	Benzene	71432	0.04 lb/ton produced	Uncontrolled	132
Coke production, by-product recovery process	3312	Naphthalene separation	303003	Benzene	71432	0.174 lb/ton coke produced	Uncontrolled	132
Coke production, by-product recovery process	3312	Tar decanter	303003	Benzene	71432	0.156 lb/ton coke produced	Uncontrolled	132
Coke production, by-product recovery process	3312	Tar decanter	303003	Benzene	71432	7.8 x 10E-3 lb/ton coke produced	Controlled, coke oven gas blanketing from collecting main, 95% efficiency	132
Coke production, by-product recovery process	3312	Tar dewatering	303003	Benzene	71432	0.042 lb/ton coke produced	Uncontrolled	132
Coke production, by-product recovery process	3312	Tar dewatering	303003	Benzene	71432	0.0042 lb/ton coke produced	Controlled, wash oil scrubber, 90% efficiency	132
Coke production, by-product recovery process	3312	Tar dewatering	303003	Benzene	71432	8.4 x 10E-4 lb/ton coke produced	Controlled, coke oven gas blanketing from collecting main, 98% efficiency	132
Coke production, by-product recovery process	3312	Tar storage	303003	Benzene	71431	0.024 lb/ton coke produced	Uncontrolled	132
Coke production, by-product recovery process	3312	Tar storage	303003	Benzene	71432	4.8 x 10E-4 lb/ton coke produced	Controlled, coke oven gas blanketing from collecting oven, 98% efficiency	132
Coke production, by-product recovery process	3312	Tar storage	303003	Benzene	71432	2.4 x 10E-3 lb/ton coke produced	Controlled, wash-oil scrubber, 90% efficiency	132
Coke production, by-product recovery process	3312	Tar-intercepting sump	303003	Benzene	71432	0.190 lb/ton coke produced	Uncontrolled	132
Coke production, by-product recovery process	3312	Tar-intercepting sump	303003	Benzene	71432	0.0038 lb/ton coke produced	Controlled, coke oven gas blanketing from collecting main, 98% efficiency	132

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coke production, by-product recovery process	3312	Wash-oil circulation tank	303003	Benzene	71432	7.6 x 10E-3 lb/ton coke produced	Uncontrolled	132
Coke production, by-product recovery process	3312	Wash-oil circulation tank	303003	Benzene	71432	1.52 x 10E-3 lb/ton coke produced	Controlled, 98% efficiency, coke oven gas blanketing free gas holder	132
Coke production, by-product recovery process	3312	Wash-oil decanter	303003	Benzene	71432	7.6 x 10E-3 lb/ton coke produced	Uncontrolled	132
Coke production, by-product recovery process	3312	Wash-oil decanter	303003	Benzene	71432	1.52 x 10E-4 lb/ton coke produced	Controlled, 98% efficiency, coke oven gas blanketing free gas holder	132
Coke production, by-product recovery process	3312	Slot oven coking - coke quenching	30300304	Benzo(a)pyrene	50328	1 x 10E-6 lb/ton coal charged		114
Coke production, by-product recovery process	3312	Slot oven coking - door leaks	30300308	Benzo(a)pyrene	50328	141 ng/Nm3	Uncontrolled	114
Coke production, by-product recovery process	3312	Slot oven coking - door leaks	30300308	Benzo(a)pyrene	50328	1.8 ng/Nm3	Wet ESP	114
Coke production, by-product recovery process	3312	Coke ovens - charging	30300302	Coke oven emissions		0.1 to 1.10 lb/ton coal	For 3-9 mins. uncontrolled charging	29
Coke production, by-product recovery process	3312	Coke ovens - doors	30300308	Coke oven emissions		0.24 to 0.9 lb/ton coal	For 30 to 75% leaking doors	29
Coke production, by-product recovery process	3312	Coke ovens - lids	30300314	Coke oven emissions		0.004-0.04 lb/ton coal	For 20 to 40% leaking lids	29
Coke production, by-product recovery process	3312	Coke ovens - offtakes	30300314	Coke oven emissions		0.004-0.04 lb/ton coal	For 20 to 40% leaking offtakes	29
Coke production, by-product recovery process	3312	Entire process	303003	Naphthalene	91203	0.01184 lb/ton coke	Estimated from capacity and wt. percent naphthalene (0.8)	99
Coke production, by-product recovery process	3312	By-product recovery, tar processing - decanter	30300315	Polycyclic organic matter		0.0082 lb/ton coal fed to coking oven	Uncontrolled, represents both gaseous and particulate POM	114

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Coke production, by-product recovery process	3312	By-product recovery, tar processing - dewatering and storage	30300315	Polycyclic organic matter		6 x 10E-6 lb/ton coal fed to coking oven	Uncontrolled, represents both gaseous and particulate POM	114
Coke production, by-product recovery process	3312	By-product recovery, tar processing - distillation product storage	30300315	Polycyclic organic matter		2.2 x 10E-5 lb/ton coal fed to coking ov	Uncontrolled, represents both gaseous and particulate POM	114
Coke production, by-product recovery process	3312	Slot oven coking - coke quenching	30300304	Polycyclic organic matter		0.0037 lb/ton coal charged	Clean water quench	114
Coke production, by-product recovery process	3312	Slot oven coking - coke quenching	30300304	Polycyclic organic matter		1.226 lb/ton coal charged	Contaminated water used for quench	114
Coke production, by-product recovery process	3312	Slot oven coking - door leaks	30300308	Polycyclic organic matter		5524 ng/Nm3	Uncontrolled, average of 4 test runs	114
Coke production, by-product recovery process	3312	Slot oven coking - door leaks	30300308	Polycyclic organic matter		1254 ng/Nm3	Wet ESP	114
Coke production, by-product recovery process	3312	Slot oven coking - door leaks	30300308	Polycyclic organic matter		1.4 x 10E-7 lb/ton coal charged	Wet ESP	114
Controlled/prescribed burning	0051	Backing fire, 0.1 lb/ft2		Polycyclic organic matter		27.96 lb/ton TSP emitted	Lab tests of burning pine needles	114
Controlled/prescribed burning	0051	Backing fire, 0.31 lb/ft2		Polycyclic organic matter		12.91 lb/ton TSP emitted	Lab tests of burning pine needles	114
Controlled/prescribed burning	0051	Backing fire, 0.49 lb/ft2		Polycyclic organic matter		8.17 lb/ton TSP emitted	Lab tests of burning pine needles	114
Controlled/prescribed burning	0051	Heading fire, 0.1 lb/ft2		Polycyclic organic matter		1.75 lb/ton TSP emitted	Lab tests of burning pine needles	114
Controlled/prescribed burning	0051	Heading fire, 0.31 lb/ft2		Polycyclic organic matter		0.8 lb/ton TSP emitted	Lab tests of burning pine needles	114
Controlled/prescribed burning	0051	Heading fire, 0.49 lb/ft2		Polycyclic organic matter		0.78 lb/ton TSP emitted	Lab tests of burning pine needles	114
Cooling towers, industrial		Cooling towers with low efficiency drift eliminator		Chromium	7440473	Ecr=.01890 x R x (CRo4 x .448)	Ecr= Cr emission rate - mg Cr/min, R=recircul rate of cool H20 l/min, CrO4=mg conc. in recirculating H20	209
Cooling towers, industrial		Cooling towers with low efficiency drift eliminator		Chromium	7440473	Ecr=.033498 x R x (CRo4 x .448)	Ecr= Cr emission rate - mg Cr/min, R=recircul rate of cool H20 l/min, CrO4=mg conc. in recirculating H20	209

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Cooling towers, industrial		Cooling towers with low efficiency drift eliminator		Chromium	7440473	Ecr=.007% x R x (CRo4 x .448)	Ecr= Cr emission rate - mg Cr/min, R=recircul rate of cool H2O l/min, CrO4=ppm conc. in recirculating H2O	209
Cooling towers, industrial		Cooling towers with low efficiency drift eliminator		Chromium	7440473	Ecr=.01% x R x (CRo4 x .448)	Ecr= Cr emission rate - mg Cr/min, R=recircul rate of cool H2O l/min, CrO4=ppm conc. in recirculating H2O	209
Cooling towers, industrial		Cooling towers with low efficiency drift eliminator		Chromium	7440473	Ecr=.0318% x R x (CRo4 x .448)	Ecr= Cr emission rate - mg Cr/min, R=recircul rate of cool H2O l/min, CrO4=ppm conc. in recirculating H2O	209
Cooling towers, industrial		Cooling towers with low efficiency drift eliminator		Chromium	7440473	Ecr=.0267% x R x (CRo4 x .448)	Ecr= Cr emission rate - mg Cr/min, R=recircul rate of cool H2O l/min, CrO4=ppm conc. in recirculating H2O	209
Cooling towers, industrial		Cooling towers with low efficiency drift eliminator		Chromium	7440473	Ecr=(.0087%) x R x (CRo4 x .448)	Ecr= Cr emission rate - mg Cr/min, R=recircul rate of cool H2O l/min, CrO4=ppm conc. in recirculating H2O	209
Cooling towers, industrial		Cooling towers with low efficiency drift eliminator		Chromium	7440473	Ecr=(.0037%) x R x (CRo4 x .448)	Ecr= Cr emission rate - mg Cr/min, R=recircul rate of cool H2O l/min, CrO4=ppm conc. in recirculating H2O	209
Cooling towers, utility	4911	Cooling towers - once through systems		Chloroform	67663	0.00342 lb/10E6 gal cooling water	Uncontrolled	164
Cooling towers, utility	4911	Cooling towers - recirculating systems		Chloroform	67663	6.25 lb/10E6 gal cooling water	Uncontrolled	164
Cooling towers, utility	4911	Fresh water cooling tower	30600701	Chromium	7440473	5.7 lb/10E12 Btu	Drift loss range of 0.1-0.2%, based on source tests, as total chromium	161
Cooling towers, utility	4911	Fresh water cooling tower	30600701	Chromium	7440473	0.139 lb/10E12 Btu	Drift loss range of 0.0002-0.005%, based on source tests, as total chromium	161
Cooling towers, utility	4911	Fresh water cooling towers with drift loss range of 0.002 to 0.005%	1	Nickel	7440020	0.788 lb/10E12 Btu heat input to power plant	Uncontrolled, based on source tests	110
Cooling towers, utility	4911	Fresh water cooling towers with drift loss range of 0.1 to 0.2%	1	Nickel	7440020	37.10 lb/10E12 Btu heat input to power plant	Uncontrolled, based on source tests	110
Copper ore milling/processing	1021	Entire process	303	Copper	7440508	0.004 lb/ton ore processed	Controlled, average of estimates for about 30 plants	53
Copper smelting	3331	Entire process	303005	Radionuclides		140 nCi U-238/metric ton Cu	Controlled with ESP and acid gas cleanup plant, rough est., reverberatory furnace, no roaster	37
Copper smelting	3331	Entire process	303005	Radionuclides		140 nCi U-234/metric ton Cu	Controlled with ESP and acid gas cleanup plant, rough est., reverberatory furnace, no roaster	37

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Copper smelting	3331	Entire process	303005	Radionuclides		240 nCi Th-230/metric ton Cu	Controlled with ESP and acid gas cleanup plant, rough est., reverberatory furnace, no roaster	37
Copper smelting	3331	Entire process	303005	Radionuclides		23 nCi Ra-226/metric ton Cu	Controlled with ESP and acid gas cleanup plant, rough est., reverberatory furnace, no roaster	37
Copper smelting	3331	Entire process	303005	Radionuclides		2700 nCi Pb-210/metric ton Cu	Controlled with ESP and acid gas cleanup plant, rough est., reverberatory furnace, no roaster	37
Copper smelting	3331	Entire process	303005	Radionuclides		2700 nCi Po-210/metric ton Cu	Controlled with ESP and acid gas cleanup plant, rough est., reverberatory furnace, no roaster	37
Copper smelting	3331	Entire process	303005	Radionuclides		180 nCi Th-232/metric ton Cu	Controlled with ESP and acid gas cleanup plant, rough est., reverberatory furnace, no roaster	37
Copper smelting	3331	Entire process	303005	Radionuclides		180 nCi Ra-232/metric ton Cu	Controlled with ESP and acid gas cleanup plant, rough est., reverberatory furnace, no roaster	37
Copper smelting	3331	Entire process	303005	Radionuclides		180 nCi Th-228/metric ton Cu	Controlled with ESP and acid gas cleanup plant, rough est., reverberatory furnace, no roaster	37
Copper smelting	3331	Entire process	303009	Radionuclides		950 nCi U-238/metric ton Cu	Typical control = acid gas plant, cyclone, water spray, ESP, rough estimate	39
Copper smelting	3331	Entire process	303009	Radionuclides		950 nCi U-234/metric ton Cu	Typical control = acid gas plant, cyclone, water spray, ESP, rough estimate	39
Copper smelting	3331	Entire process	303009	Radionuclides		90 nCi Th-230/metric ton Cu	Typical control = acid gas plant, cyclone, water spray, ESP, rough estimate	39
Copper smelting	3331	Entire process	303009	Radionuclides		36 nCi Ra-226/metric ton Cu	Typical control = acid gas plant, cyclone, water spray, ESP, rough estimate	39
Copper smelting	3331	Entire process	303009	Radionuclides		1500 nCi Pb-210/metric ton Cu	Typical control = acid gas plant, cyclone, water spray, ESP, rough estimate	39
Copper smelting	3331	Entire process	303009	Radionuclides		710 nCi Po-210/metric ton Cu	Typical control = acid gas plant, cyclone, water spray, ESP, rough estimate	39
Copper smelting	3331	Entire process	303009	Radionuclides		29 nCi Th-232/metric ton Cu	Typical control = acid gas plant, cyclone, water spray, ESP, rough estimate	39
Copper smelting	3331	Entire process	303009	Radionuclides		31 nCi Th-228/metric ton Cu	Typical control = acid gas plant, cyclone, water spray, ESP, rough estimate	39
Copper smelting-high arsenic ore	3331	Fugitive emissions from flue dust handling	303009	Arsenic	7440382	0.001 x arsenic content of flue dust	Uncontrolled emissions, based on tests of one plant	204
Copper smelting-high arsenic ore	3331	Fugitive emissions from anode furnace	30300916	Arsenic	7440382	0.20 x arsenic content of blister copper	Uncontrolled emissions, based on tests of one plant	204

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Copper smelting-high arsenic ore	3331	Fugitive emissions from calcine transfer	30300513	Arsenic	7440382	0.0003 x arsenic content of calcine	Uncontrolled emissions, based on tests of one plant	204
Copper smelting-high arsenic ore	3331	Fugitive emissions from matte tapping	30300514	Arsenic	7440382	0.025 x arsenic content of matte	Uncontrolled emissions, based on tests of one plant	204
Copper smelting-high arsenic ore	3331	Fugitive emissions from slag tapping	30300517	Arsenic	7440382	0.0012 x arsenic content of furnace slag	Uncontrolled emissions, based on tests of one plant	204
Copper smelting-high arsenic ore	3331	Fugitive emissions from converter slag return	30300518	Arsenic	7440382	0.0003 x arsenic content converter slag	Uncontrolled emissions, based on tests of one plant	204
Copper smelting-high arsenic ore	3331	Fugitive emissions from converter operations	30300515	Arsenic	7440382	0.15 x arsenic cont. converter proc. offgas	Uncontrolled emissions, based on tests of one plant	204
Copper smelting-high arsenic ore	3331	Fugitive emissions from arsenic building	303005	Arsenic	7440382	0.005 x arsenic content of charge to arsenic plt	Uncontrolled emissions, based on tests of one plant	204
Copper smelting-low arsenic ore	3331	Fugitive emissions from flue dust handling	303005	Arsenic	7440382	0.001 x as cont. in the transferred dust	Represents uncontrolled fugitive emissions	204
Copper smelting-low arsenic ore	3331	Fugitive emissions from anode furnace	30300516	Arsenic	7440382	0.11 x arsenic cont. in anode furnace	Represents uncontrolled fugitive emissions	204
Copper smelting-low arsenic ore	3331	Fugitive emissions from converter operations	30300515	Arsenic	7440382	0.15 x arsenic cont. in proc. offgas	Represents uncontrolled fugitive emissions	204
Copper smelting-low arsenic ore	3331	Fugitive emissions from slag tapping	30300517	Arsenic	7440382	0.001 x arsenic content of furnace slag	Represents uncontrolled fugitive emissions	204
Copper smelting-low arsenic ore	3331	Fugitive emissions from matte tapping	30300514	Arsenic	7440382	0.015 x arsenic content of matte	Represents uncontrolled fugitive emissions	204
Copper smelting-low arsenic ore	3331	Fugitive emissions from calcine transfer	30300513	Arsenic	7440382	0.005 x arsenic content of calcine	Represents uncontrolled fugitive emissions	204
Copper smelting-low arsenic ore	3331	Fluid-bed roaster/converter (acid plant outlet)	303005	Arsenic	7440382	0.0073 - 0.023 lbs/ton feed	Acid plant functions as control system	204
Copper smelting-low arsenic ore	3331	Fluid-bed roaster	30300509	Arsenic	7440382	3 x 10E-4 - 6 x 10E-4 lbs/ton feed	Emissions controlled by ventri scrubber	204
Copper smelting-low arsenic ore	3331	Fluid-bed roaster	30300509	Arsenic	7440382	0.019 - 0.031 lbs/ton feed	Uncontrolled emissions, inlet to scrubber	204
Copper smelting-low arsenic ore	3331	Converter secondary hood outlet	30300515	Arsenic	7440382	0.038 - 0.174 lbs/ton feed	Uncontrolled emissions	204
Copper smelting-low arsenic ore	3331	Matte tapping hood outlet	30300514	Arsenic	7440382	0.0072 - 0.012 lbs/ton feed	Uncontrolled emissions	204

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Copper smelting-low arsenic ore	3331	Acid plant outlet	303009	Arsenic	7440382	1 x 10E-4 - 2 x 10E-4 lbs/ton feed	Emissions controlled by ESP	204
Copper smelting-low arsenic ore	3331	Converter (acid plant inlet)	30300904	Arsenic	7440382	2 x 10E-4 - 7 x 10E-4 lbs/ton feed	Emissions controlled by ESP	204
Copper smelting-low arsenic ore	3331	Converter	30300904	Arsenic	7440382	3 x 10E-4 - 1.4 x 10E-3 lbs/ton feed	Uncontrolled emissions, inlet to ESP	204
Copper smelting-low arsenic ore	3331	Combined fluid-bed roaster/electric furnace/converter stream	30300924	Arsenic	7440382	0.041 - 0.081 lbs/ton feed	Emissions controlled by spray chamber/baghouse	204
Copper smelting-low arsenic ore	3331	Combined fluid-bed roaster/electric furnace/converter stream	30300924	Arsenic	7440382	4.45 - 6.28 lbs/ton feed	Uncontrolled emissions	204
Copper smelting-low arsenic ore	3331	Matte tapping	30300914	Arsenic	7440382	0.0074 - 0.0087 lbs/ton feed	Emissions controlled by a baghouse	204
Copper smelting-low arsenic ore	3331	Roaster calcining fugitives	30300913	Arsenic	7440382	0.0044 - 0.016 lbs/ton feed	Controlled by a spray chamber/cold ESP	204
Copper smelting-low arsenic ore	3331	Converter building	30300904	Arsenic	7440382	7 x 10E-4 - 0.014 lbs/ton feed	Emissions controlled by a baghouse	204
Copper smelting-low arsenic ore	3331	Converter building	30300904	Arsenic	7440382	0.08 - 0.29 lbs/ton feed	Uncontrolled emissions, inlet to baghouse	204
Copper smelting-low arsenic ore	3331	Combined roaster/reverb furnace streams	30300903	Arsenic	7440382	0.08 - 0.26 lbs/ton feed	Process emissions controlled by an ESP	204
Copper smelting-low arsenic ore	3331	Combined roaster/reverb furnace streams	30300903	Arsenic	7440382	1.80 - 9.37 lbs/ton feed	Uncontrolled process emissions, inlet to ESP	204
Copper smelting-low arsenic ore	3331	Reverberatory furnace	30300903	Arsenic	7440382	0.53 - 5.21 lbs/ton feed	Uncontrolled process emissions, inlet to ESP	204
Copper smelting-low arsenic ore	3331	Ore roasting	30300902	Arsenic	7440382	0.29 - 0.46 lbs/ton feed	Uncontrolled process emissions, inlet to ESP	204
Copper sulfate production	2819	Entire process	301	Copper	7440508	2.52 lb/ton produced	Engineering Judgement	93,97
Cotton defoliating/desiccating		Drift during application		Chloric acid, sodium salt	7775099	20 lb/ton applied	Estimated	97
Cotton field spraying with arsenic acid		Airplane application		Arsenic	7440382	97.6 lb As acid/ton As applied	Estimated from literature data	?
Cotton field spraying with arsenic acid		Ground application		Arsenic	7440382	12.2 lb As acid/ton As applied	Range 1.8 to 32.4 lb arsenic acid/ton As acid applied	?

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Cotton ginning	0724	Entire process	30200410	Arsenic	7440382	0.0008-0.034 lb/ton cotton ginned	For stripper harvested cotton, control = cyclones & in-line filters	8
Cotton ginning	0724	Fugitive emissions	30200410	Arsenic	7440382	0.00141 lb total elem. As/bale lint	Rough estimate	32
Cotton ginning	0724	High pressure section	302004	Arsenic	7440382	0.00141 lb total elem. As/bale lint	Rough estimate, controlled with cyclone	32
Cotton ginning	0724	Low pressure section	30200404	Arsenic	7440382	9.7 x 10E-6 lb total elem. As/bale lint	Rough estimate, controlled with condenser drums or in-line filters	32
Cotton ginning	0724	Unloading fan cyclone	30200401	Arsenic	7440382	0.0006 lb/ton cotton ginned	For picker harvested cotton, control - cyclone	8
Cresol(p-) production	2865	Fugitive emissions	301	Toluene	108883	0.6 lb/ton used	Engineering estimate	13
Cresol(p-) production	2865	Process - general	301	Toluene	108883	2.4 lb/ton used	Engineering estimate	13
Cresol(p-) production	2865	Storage	407036	Toluene	108883	1.0 lb/ton used	Engineering estimate	13
Cumene production	286	Fugitive emission - flanges	30115680	Cumene	98828	0.0024 lb/hr	Uncontrolled emission factor	214
Cumene production	286	Fugitive emission - sampling connections	30115680	Cumene	98828	0.033 lb/hr	Uncontrolled emission factor	214
Cumene production	286	Fugitive emission - compressors	30115680	Cumene	98828	0.502 lb/hr	Uncontrolled emission factor	214
Cumene production	286	Fugitive emission - open-ended lines	30115680	Cumene	98828	0.0055 lb/hr	Uncontrolled emission factor	214
Cumene production	286	Fugitive emission - gas pressure relief devices	30115680	Cumene	98828	0.2292 lb/hr	Uncontrolled emission factor	214
Cumene production	286	Fugitive emission - valves	30115680	Cumene	98828	0.00051 lb/hr	Uncontrolled emission factor for a heavy liquid	214
Cumene production	286	Fugitive emission - valves	30115680	Cumene	98828	0.0132 lb/hr	Uncontrolled emission factor for a light liquid	214
Cumene production	286	Fugitive emission - valves	30115680	Cumene	98828	0.154 lb/hr	Uncontrolled emission factor for a gas	214
Cumene production	286	Fugitive emission - pump seals	30115680	Cumene	98828	0.0297 lb/hr	Uncontrolled emission factor for a heavy liquid	214
Cumene production	286	Fugitive emission - pump seals	30115680	Cumene	98828	0.0396 lb/hr	Uncontrolled emission factor for a light liquid	214

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Cumene production	2865	Benzene azeotropic drying column	30115402	Benzene	71432	0.04 lb/ton cumene produced	Uncontrolled, based on hypothetical plant producing 5 x 10E8 lb cumene/yr	132
Cumene production	2865	Benzene azeotropic drying column	30115402	Benzene	71432	0.002 lb/ton cumene produced	Controlled, flare, 95% efficiency	132
Cumene production	2865	Benzene recovery column	30115405	Benzene	71432	0.034 lb/ton cumene produced	Uncontrolled	132
Cumene production	2865	Benzene recovery column	30115405	Benzene	71432	0.0017 lb/ton cumene produced	Controlled, flare, 95% efficiency	132
Cumene production	2865	Catalyst mix tank scrubber	30115403	Benzene	71432	0.32 lb/ton cumene produced	Uncontrolled	132
Cumene production	2865	Catalyst mix tank scrubber	30115403	Benzene	71432	0.016 lb/ton cumene produced	Controlled, flare, 95% efficiency	132
Cumene production	2865	Wash-decanter system	30115404	Benzene	71432	0.02 lb/ton cumene produced	Uncontrolled, 78.4 wt% benzene	132
Cumene production	2865	Wash-decanter system	30115404	Benzene	71432	0.0008 lb/ton cumene produced	Controlled, flare, 95% efficiency	132
Cumene production	2865	Entire process	30115401	Propylene	115071	0.34 lb/ton cumene	Controlled, engineering judgement, based on ratio of propane emissions (1:2 propylic:propane)	88
Cyclohexane production by benzene hydrogenation process	2865	Fugitive emissions	30115780	Benzene	71432	0.308 lb/ton cyclohexane produced	Based on model plant with capacity of 1.1 x 10E8 lb/yr, uncontrolled	146
Cyclohexane production by benzene hydrogenation process	2865	Fugitive emissions	30115780	Benzene	71432	0.1028 lb/ton cyclohexane produced	Based on model plant with capacity of 3.31 x 10E8 lb/yr, uncontrolled	146
Cyclohexane production by benzene hydrogenation process	2865	Fugitive emissions	30115780	Benzene	71432	0.014 lb/ton cyclohexane produced	Based on model plant with capacity of 5.51 x 10E8 lb/yr, controlled by inspection/maintenance	146
Cyclohexane production by benzene hydrogenation process	2865	Fugitive emissions	30115780	Benzene	71432	0.0616 lb/ton cyclohexane produced	Based on model plant with capacity of 5.51 x 10E8 lb/yr, uncontrolled	146
Cyclohexane production by benzene hydrogenation process	2865	Fugitive emissions	30115780	Benzene	71432	0.07 lb/ton cyclohexane produced	Based on model plant with 1.1 x 10E8 lb/yr capacity, controlled by inspection/maintenance	146
Cyclohexane production by benzene hydrogenation process	2865	Fugitive emissions	30115780	Benzene	71432	0.0234 lb/ton cyclohexane produced	Based on model plant with 3.31 x 10E8 lb/yr capacity, controlled by inspection/maintenance	146

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Cyclohexane production by benzene hydrogenation process	2865	Storage	407036	Benzene	71432	0.85 lb/ton cyclohexane produced	Based on model plant with capacity of 1.1 x 10E8 lb/yr, uncontrolled	146
Cyclohexane production by benzene hydrogenation process	2865	Storage	407036	Benzene	71432	0.842 lb/ton cyclohexane produced	Based on model plant with capacity of 3.31 x 10E8 lb/yr, uncontrolled	146
Cyclohexane production by benzene hydrogenation process	2865	Storage	407036	Benzene	71432	0.84 lb/ton cyclohexane produced	Based on model plant with capacity of 5.51 x 10E8 lb/yr, uncontrolled	146
Cyclohexane production by benzene hydrogenation process	2865	Storage	407	Benzene	71432	0.1272 lb/ton cyclohexane produced	Based on model plant with 1.1 x 10E8 lb/yr capacity, controlled by internal floating-roof tanks	146
Cyclohexane production by benzene hydrogenation process	2865	Storage	407	Benzene	71432	0.1262 lb/ton cyclohexane produced	Based on model plant with 3.31 x 10E8 lb/yr capacity, controlled by internal floating-roof tanks	146
Cyclohexane production by benzene hydrogenation process	2865	Storage	407	Benzene	71432	0.126 lb/ton cyclohexane produced	Based on model plant with 5.51 x 10E8 lb/yr capacity, controlled by internal floating-roof tanks	146
Degreasing operations using MC		Cold cleaner	40100302	Methylene chloride	75092	1780 lb/ton fresh (virgin) MC used	Uncontrolled, considers recycle, based on material balance	76
Degreasing operations using MC		Cold cleaner	40100302	Methylene chloride	75092	1740 lb/ton fresh (virgin) MC used	Contr = 0.7 freeboard ratio + drainage rack w/ 15 sec. drain time, considers recycle, mater. balance	76
Degreasing operations using MC		Conveyorized vapor degreaser	40100224	Methylene chloride	75092	1920 lb/ton fresh (virgin) MC used	Uncontrolled, considers recycle, material balance	76
Degreasing operations using MC		Conveyorized vapor degreaser	40100224	Methylene chloride	75092	1820 lb/ton fresh (virgin) MC used	Controlled by carbon adsorber or refrig. freeboard chiller, considers recycle, material balance	76
Degreasing operations using MC		Open top vapor degreasers	40100204	Methylene chloride	75092	1840 lb/ton fresh (virgin) MC used	Uncontrolled, considers recycle, material balance	76
Degreasing operations using MC		Open top vapor degreasers	40100204	Methylene chloride	75092	1780 lb/ton fresh (virgin) MC used	Controlled by refrigerated freeboard chiller, considers recycle, material balance	76
Degreasing operations using MC	753	Carburetor cleaners	40100302	Methylene chloride	75092	1780 lb/ton fresh (virgin) MC used	Uncontrolled, considers recycle, material balance	76
Degreasing operations using MC	753	Carburetor cleaners	40100302	Methylene chloride	75092	1520 lb/ton fresh (virgin) MC used	Controlled by water cover, considers recycle, material balance	76
Degreasing operations using PCE		Cold cleaner	40100304	Tetrachloroethylene	127184	1560 lb/ton of fresh (virgin) PCE used	Uncontrolled, based on material balance	76

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Degreasing operations using PCE		Cold cleaner	40100304	Tetrachloroethylene	127184	1520 lb/ton of fresh (virgin) PCE used	Controlled by 0.7 freeboard ration & drainage rack w/ 15 sec. drain time, based on material balance	76
Degreasing operations using PCE		Conveyorized vapor degreaser	40100223	Tetrachloroethylene	127184	1920 lb/ton of fresh (virgin) PCE used	Uncontrolled, based on material balance	76
Degreasing operations using PCE		Conveyorized vapor degreaser	40100223	Tetrachloroethylene	127184	1820 lb/ton of fresh (virgin) PCE used	Controlled by carbon adsorber or refrigerated freeboard chiller, based on material balance	76
Degreasing operations using PCE		Open top vapor degreasers	40100203	Tetrachloroethylene	127184	1860 lb/ton of fresh (virgin) PCE used	Uncontrolled, based on material balance	76
Degreasing operations using PCE		Conveyorized vapor degreaser	40100223	Tetrachloroethylene	127184	0.88 lb/lb virgin PCE used	Ctrl hot vapor recycle or superheated vapor and sump cooling or freeboard refrigeration, est. from unctrl using mass bal	208
Degreasing operations using PCE		Cold cleaner	40100304	Tetrachloroethylene	127184	0.48 lb/lb virgin PCE used	Controlled by watercover and 15 sec. drain time, estimated from uncontrolled using mass balace, 16 hours downtime	208
Degreasing operations using PCE		Conveyorized vapor degreaser	40100223	Tetrachloroethylene	127184	0.89 lb/lb virgin PCE used	Ctrl carbon adsorbtion or freeboard refrigeration device w/sump cooling, est. from unctrl using mass bal, 16 hrs dwntime	208
Degreasing operations using PCE		Open top vapor degreasers	40100203	Tetrachloroethylene	127184	0.87 lb/lb virgin PCE used	Controlled by hoist at 3fpm, auto cover, estimated from uncontrolled using mass balance, 16 hours downtime	208
Degreasing operations using PCE		Open top vapor degreasers	40100203	Tetrachloroethylene	127184	0.89 lb/lb virgin PCE used	Controlled by hoist at 11fpm, auto cover, estimated from uncontrolled using mass balance, 16 hours downtime	208
Degreasing operations using PCE		Open top vapor degreasers	40100203	Tetrachloroethylene	127184	0.84 lb/lb virgin PCE used	Controlled by hoist at 3fpm, freeboard refrigeration device, est from uncontrolled using mass balance, 16 hours downtime	208
Degreasing operations using PCE		Open top vapor degreasers	40100203	Tetrachloroethylene	127184	0.87 lb/lb virgin PCE used	Controlled by hoist at 3fpm, enclosed design w/sump cooling, est from uncontrolled using mass balance, 16 hourn downtime	208
Degreasing operations using PCE		Conveyorized vapor degreaser	40100223	Tetrachloroethylene	127184	0.78 lb/lb virgin PCE used	Ctrl hot vapor recycle or superheated vapor and sump cooling or freeboard refrigeration, 8 hrs downtime, 7 days/week	208
Degreasing operations using PCE		Conveyorized vapor degreaser	40100223	Tetrachloroethylene	127184	0.90 lb/lb virgin PCE used	Ctrl by refrigeration device or carbon adsorption, either way w/ or wo/sump cooling, 8 hrs downtime, 7 days/week	208
Degreasing operations using PCE		Open top vapor degreasers	40100203	Tetrachloroethylene	127184	0.73 lb/lb virgin PCE used	Controlled by hoist at 3fpm with automated cover, 8 hours downtime.	208
Degreasing operations using PCE		Open top vapor degreasers	40100203	Tetrachloroethylene	127184	0.73 lb/lb virgin PCE used	Controlled by hoist at 3fpm with freeboard refrigeration device, 8 hours downtime.	208

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Degreasing operations using PCE		Open top vapor degreasers	40100203	Tetrachloroethylene	127184	0.84-0.87 lb/lb virgin PCE used	Controlled by hoist at 11fpm with automated cover, represents 8 hours downtime.	208
Degreasing operations using PCE		Open top vapor degreasers	40100203	Tetrachloroethylene	127184	0.73-0.80 lb/lb virgin PCE used	Controlled by hoist at 11fpm, enclose design with sump cooling, represents differences in downtime.	208
Degreasing operations using PCE		Open top vapor degreasers	40100203	Tetrachloroethylene	127184	0.80-0.87 lb/lb virgin PCE used	Controlled by hoist at 11fpm and freeboard refrigeration device, represents differences in downtime.	208
Degreasing operations using TCE		Cold cleaner	40100306	Trichloroethylene	79016	1480 lb/ton fresh (virgin) TCE used	Uncontrolled, based on material balance	74
Degreasing operations using TCE		Cold cleaner	40100306	Trichloroethylene	79016	1440 lb/ton fresh (virgin) TCE used	Controlled by 0.7 freeboard ratio & drainage rack w/ 15 sec. drain time, based on material balance	74
Degreasing operations using TCE		Conveyorized vapor degreaser	40100225	Trichloroethylene	79016	1920 lb/ton fresh (virgin) TCE used	Uncontrolled, based on material balance	74
Degreasing operations using TCE		Conveyorized vapor degreaser	40100225	Trichloroethylene	79016	1820 lb/ton fresh (virgin) TCE used	Controlled by carbon absorber or refrigerated freeboard chiller, based on material balance	74
Degreasing operations using TCE		Open top vapor degreasers	40100205	Trichloroethylene	79016	1860 lb/ton fresh (virgin) TCE used	Uncontrolled, based on material balance	74
Degreasing operations using TCE		Open top vapor degreasers	40100205	Trichloroethylene	79016	1780 lb/ton fresh (virgin) TCE used	Controlled by above or below freezing refrigerated freeboard chiller, based on material balance	74
Degreasing operations using TCE		Conveyorized vapor degreaser	40100225	Trichloroethylene	79016	0.90 lb/lb fresh TCE used	Ctrl carbon adsorbtion or freeboard refrigeration device with or without sump cooling, 8 hrs downtime, 7 days/week	208
Degreasing operations using TCE		Conveyorized vapor degreaser	40100225	Trichloroethylene	79016	0.78 lb/lb fresh TCE used	Ctrl by sump cooling or freeboard refrigeration with hot vapor recycle or superheated vapor, 8 hrs downtime, 7 days/week	208
Degreasing operations using TCE		Open top vapor degreasers	40100205	Trichloroethylene	79016	0.73 lb/lb fresh TCE used	Controlled by hoist at 3fpm with freeboard refrigeration device or automated cover, 8 hours downtime	208
Degreasing operations using TCE		Open top vapor degreasers	40100205	Trichloroethylene	79016	0.84-0.87 lb/lb fresh TCE used	Controlled by hoist at 11fpm with automated cover, 8 hours downtime.	208
Degreasing operations using TCE		Open top vapor degreasers	40100205	Trichloroethylene	79016	0.73-0.80 lb/lb fresh TCE used	Controlled by hoist at 11fpm with enclosed design and sump cooling, 8 hours downtime.	208
Degreasing operations using TCE		Open top vapor degreasers	40100205	Trichloroethylene	79016	0.80-0.87 lb/lb fresh TCE used	Controlled by hoist at 11fpm with freeboard refrigeration device, 8 hours downtime.	208
Degreasing operations using TCE		Cold cleaner	40100306	Trichloroethylene	79016	0.72 lb/lb fresh TCE used	Controlled by water cover and 15 seconds draintime, 16 hours downtime.	208

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INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SLC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Degreasing operations using TCE		Conveyorized vapor degreaser	40100225	Trichloroethylene	79016	0.88 lb/lb fresh TCE used	Controlled by sump cooling or freeboard refrigeration with hot vapor recycle or superheated vapor, 16 hrs downtime	208
Degreasing operations using TCE		Conveyorized vapor degreaser	40100225	Trichloroethylene	79016	0.89 lb/lb fresh TCE used	Controlled by carbon adsorption or freeboard refrigeration device, with sump cooling, 16 hrs downtime	208
Degreasing operations using TCE		Open top vapor degreasers	40100205	Trichloroethylene	79016	0.89 lb/lb fresh TCE used	Controlled by hoist at 3fpm with automated cover, 16 hrs downtime	208
Degreasing operations using TCE		Open top vapor degreasers	40100205	Trichloroethylene	79016	0.73 lb/lb fresh TCE used	Controlled by hoist at 3fpm with enclosed design and sump cooling, 16 hrs downtime	208
Degreasing operations using TCE		Open top vapor degreasers	40100205	Trichloroethylene	79016	0.87 lb/lb fresh TCE used	Controlled by hoist at 3fpm with freeboard refrigeration device, 16 hrs downtime	208
Degreasing operations using TCE		Open top vapor degreasers	40100205	Trichloroethylene	79016	0.90 lb/lb fresh TCE used	Controlled by hoist at 11fpm with automated cover, 16 hrs downtime	208
Degreasing operations using TCE		Open top vapor degreasers	40100205	Trichloroethylene	79016	0.97 lb/lb fresh TCE used	Controlled by hoist at 3fpm with enclosed design and sump cooling, 8 hrs downtime	208
Degreasing operations using methyl chloroform		Entire process	40100	1,1,1-Trichloroethane	71556	0.03 lb/ton methyl chloroform	Based on 3% wt. in methyl chloroform	93
Degreasing operations using methyl chloroform		Cold cleaner	40100305	1,1,1-Trichloroethane	71556	1720 lb/ton (fresh) virgin solvent used	Uncontrolled, considers recycle, based on material balance	102
Degreasing operations using methyl chloroform		Cold cleaner	40100305	1,1,1-Trichloroethane	71556	1680 lb/ton (fresh) virgin solvent used	Control. by 0.7 freeboard ratio + drainage rack w/ 15 sec. drain time, considers recy., mater. bal.	102
Degreasing operations using methyl chloroform		Conveyorized vapor degreaser	40100222	1,1,1-Trichloroethane	71556	1920 lb/ton (fresh) virgin solvent used	Uncontrolled, considers recycle, based on material balance	76
Degreasing operations using methyl chloroform		Conveyorized vapor degreaser	40100222	1,1,1-Trichloroethane	71556	1820 lb/ton (fresh) virgin solvent used	Controlled by carbon adsorber or refrig. freeboard chiller, considers recycle, material balance	76
Degreasing operations using methyl chloroform		Open top vapor degreasers	40100202	1,1,1-Trichloroethane	71556	1860 lb/ton (fresh) virgin solvent used	Uncontrolled, considers recycle, based on material balance	76
Degreasing operations using methyl chloroform		Open top vapor degreasers	40100202	1,1,1-Trichloroethane	71556	1780 lb/ton (fresh) virgin solvent used	Controlled by refrigerated freeboard chiller, considers recycle, based on material balance	76
Degreasing operations using trichlorotrifluoroethane		Cold cleaner	40100	1,1,2-Trichloro-1,2,2-trifluoroethane	76131	1760 lb/ton fresh (virgin) solvent used	Uncontrolled, considers recycle, based on material balance	102
Degreasing operations using trichlorotrifluoroethane		Cold cleaner	40100	1,1,2-Trichloro-1,2,2-trifluoroethane	76131	1720 lb/ton fresh (virgin) solvent used	Contr = 0.7 freeboard ratio + drainage rack w/ 15 sec. drain time, considers recycle, mater. balance	102

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Degreasing operations using trichlorotrifluoroethane		Conveyorized vapor degreaser	40100298	1,1,2-Trichloro-1,2,2-trifluoroethane	76131	1920 lb/ton fresh (virgin) solvent used	Uncontrolled, considers recycle, based on material balance	76
Degreasing operations using trichlorotrifluoroethane		Conveyorized vapor degreaser	40100298	1,1,2-Trichloro-1,2,2-trifluoroethane	76131	1820 lb/ton fresh (virgin) solvent used	Controlled by carbon adsorber or refrig. freeboard chiller, considers recycle, material balance	76
Degreasing operations using trichlorotrifluoroethane		Open top vapor degreasers	40100207	1,1,2-Trichloro-1,2,2-trifluoroethane	76131	1860 lb/ton fresh (virgin) solvent used	Uncontrolled, considers recycle, based on material balance	76
Degreasing operations using trichlorotrifluoroethane		Open top vapor degreasers	40100207	1,1,2-Trichloro-1,2,2-trifluoroethane	76131	1780 lb/ton fresh (virgin) solvent used	Controlled by refrig. freeboard chiller, considers recycle, based on material balance	76
Demolition and renovation of buildings		Waste movement to temp. storage and transfer to trucks		Asbestos	1332214	8.74 x 10E-6 lb/cubic foot waste	Best estimate of uncontrolled emission, range 9.36 x 10E-8 to 2.56 x 10E-3	150
Dental preparations use	8021	Handling losses		Mercury	7439976	20 lb/ton of Hg handled	Control status unspecified, based on engineering judgement	113
Diammonium phosphate production	2874	Ammoniation-granulation process	301030	Hydrogen fluoride	7664393	0.08 lbs/ton P2O5	Controlled factor	101
Diammonium phosphate production	2874	Ammoniation-granulation process	30103002	Hydrogen fluoride	7664393	0.3 lbs/ton P2O5	Uncontrolled	101
Diammonium phosphate production	2874	Dryer/cooler	30103001	Hydrogen fluoride	7664393	0.3 lbs/ton P2O5	Uncontrolled	101
Dichloroaniline production	2869	General emissions	311	Nitrobenzene	98953	3.0 lb/ton used	Based on engineering estimate	13
Dichloroaniline(3,4) production	2869	Fugitive emissions	301	1,2-Dichlorobenzene	95501	0.6 lb/ton 3,4-dichloroaniline produced	General estimates, no specifics on control	48
Dichloroaniline(3,4) production	2869	Process emissions	301	1,2-Dichlorobenzene	95501	3.1 lb/ton 3,4-dichloroaniline produced	General estimates, no specifics on control	48
Dichloroaniline(3,4) production	2869	Storage tank emissions	407060	1,2-Dichlorobenzene	95501	0.3 lb/ton 3,4-dichloroaniline produced	General estimates, no specifics on control	48
Dichlorobenzene(1,2) production	2869	Fugitive emissions	301301	1,2-Dichlorobenzene	95501	1.82 lb/ton 1,2-dichlorobenzene produced	Based on data from site visit, no specifics on controls, likely to be high value	48

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Dichlorobenzene(1,2) production	2865	Process emissions	301301	1,2-Dichlorobenzene	95501	4.64 lb/ton 1,2-dichlorobenzene produced	Based on data from site visit, no specifics on controls, likely to be high value	48
Dichlorobenzene(1,2) production	2865	Storage tank emissions	407060	1,2-Dichlorobenzene	95501	0.94 lb/ton 1,2-dichlorobenzene produced	Based on data from site visit, no specifics on controls, likely to be high value	48
Dichlorobenzene(1,4) production	2865	Fugitive emissions	301301	1,4-Dichlorobenzene	106467	2.04 lb/ton product produced	Estimate based on data from site visits, specifics on control not available, likely to be high value	48
Dichlorobenzene(1,4) production	2865	Process emissions	301301	1,4-Dichlorobenzene	106467	11.62 lb/ton product produced	Estimate based on data from site visits, specifics on control not available, likely to be high value	48
Dichlorobenzene(1,4) production	2865	Storage tank emissions	407060	1,4-Dichlorobenzene	106467	0.82 lb/ton product produced	Estimate based on data from site visits, specifics on control not available, likely to be high value	48
Die-casting production using zinc-based alloys	3369	Entire process	304050	Zinc	7440666	10 lb/ton of zinc processed	Based on information obtained from die-casting companies in 1949	66
Dielectric fluid use in electrical apparatus	36	Fugitive emissions	313	1,2,4-Trichlorobenzene	120821	0.116 lbs/ton fluid used	Based on material balance	48
Dimethyl terephthalate production	2869	Fugitive emissions	301031	Xylenes (mixed isomers)	1330207	0.28 lb/ton product	Based on site visit data, Hydroscience, Inc.	67
Dimethyl terephthalate production	2869	Process emissions	30'03101	Xylenes (mixed isomers)	1330207	13.6 lb/ton product	Based on site visit data, Hydroscience, Inc.	67
Dimethyl terephthalate production	2869	Storage tank emissions	407	Xylenes (mixed isomers)	1330207	0.28 lb/ton product	Based on site visit data, Hydroscience, Inc.	67
Dimethyl terephthalate production by methanol esterification	2869	Recycled and fresh methanol storage tank vents	301031	Methanol	67561	0.26 lb/ton dimethyl terephthalate prod.	Uncontrolled, based on hypothetical plant operating 8760 h/yr and having 5.93 x 10E8 lb/yr capacity	62
Dimethyl terephthalate production by methanol esterification	2869	Recycled and fresh methanol storage tank vents	301031	Methanol	67561	0.026 lb/ton dimethyl terephthalate prod	Controlled by water absorber, based on hypothetical plant operating 8760 h/yr & 5.39x10E8 lb/yr cap	62
Dinitrobenzene production	2869	General emissions	301	Nitrobenzene	98953	3 lb/ton used	Based on engineering estimate	13
Dodecylphenol production	2869	Fugitive emissions	301	Phenol	108952	0.38 lb/ton used	Engineering judgement	13
Dodecylphenol production	2869	General emissions	301	Phenol	108952	1.6 lb/ton used	Engineering judgement	13
Dodecylphenol production	2869	Storage	407084	Phenol	108952	0.02 lb/ton used	Engineering judgement	13
Drum and barrel furnace	49	Stack	5	Heptachlorodibenzofurans, total		2.0 ng/dscm @ 3% O2	Tier 4 stack test sampling	115

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Drum and barrel furnace	49	Stack	S	Heptachlorodibenzo-p-dioxins, total		1.3 ng/dscm @ 3% O2	Tier 4 stack test sampling	119
Drum and barrel furnace	49	Stack	S	Hexachlorodibenzofurans, total		3.0 ng/dscm @ 3% O2	Tier 4 stack test sampling	119
Drum and barrel furnace	49	Stack	S	Hexachlorodibenzo-p-dioxins, total		0.79 ng/dscm @ 3% O2	Tier 4 stack test sampling	119
Drum and barrel furnace	49	Stack	S	Octachlorodibenzofurans, total		0.55 ng/dscm @ 3% O2	Tier 4 stack test sampling	119
Drum and barrel furnace	49	Stack	S	Octachlorodibenzo-p-dioxins, total		0.92 ng/dscm @ 3% O2	Tier 4 stack test sampling	119
Drum and barrel furnace	49	Stack	S	Pentachlorodibenzofurans, total		6.2 ng/dscm @ 3% O2	Tier 4 stack test sampling	119
Drum and barrel furnace	49	Stack	S	Pentachlorodibenzo-p-dioxins, total		0.72 ng/dscm @ 3% O2	Tier 4 stack test sampling	119
Drum and barrel furnace	49	Stack	S	2,3,7,8-Tetrachlorodibenzofuran		0.90 ng/dscm @ 3% O2	Tier 4 stack test sampling	119
Drum and barrel furnace	49	Stack	S	Tetrachlorodibenzofurans, total		14 ng/dscm @ 3% O2	Tier 4 stack test sampling, except the 2,3,7,8-isomer	119
Drum and barrel furnace	49	Stack	S	2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	0.05 ng/dscm @ 3% O2	Tier 4 stack test sampling	119
Drum and barrel furnace	49	Stack	S	Tetrachlorodibenzo-p-dioxins, total		1.2 ng/dscm @ 3% O2	Tier 4 stack test sampling, except the 2,3,7,8 isomer	119
Dry chlorinated paraffin production	2869	All sources		Carbon tetrachloride	56235	2.07 x 10E4 lb/yr	Only one plant in U.S.	134
Dry cleaning, perchloroethylene	721	Fugitive emissions, dry-to-dry machine	40100101	Tetrachloroethylene	127184	41.2 lb/ton clothes cleaned	Uncontrolled, based on material balance, applies to coin-operated, commercial, & industrial sectors	154
Dry cleaning, perchloroethylene	721	Fugitive emissions, transfer machine	40100101	Tetrachloroethylene	127184	82.4 lb/ton clothes cleaned	Uncontrolled, based on material balance, applies to coin-operated, commercial, & industrial sectors	154
Dry cleaning, perchloroethylene	721	Process emissions, transfer or dry-to-dry machine	40100101	Tetrachloroethylene	127184	109.2 lb/ton clothes cleaned	Uncontrolled, based on material balance, applies to coin-operated, commercial, & industrial sectors	154
Dry cleaning, perchloroethylene	721	Process emissions, transfer or dry-to-dry machine	40100101	Tetrachloroethylene	127184	31.6 lb/ton clothes cleaned	Control, by refrig. condenser, material balance, applies to coin-oper./commer./& indust. sectors	154
Dry cleaning, perchloroethylene	721	Process emissions, transfer or dry-to-dry machine	40100101	Tetrachloroethylene	127184	8.2 lb/ton clothes cleaned	Control, by carbon adsorber, material balance, applies to coin-oper./commer./& indust. sectors	154

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Dry cleaning, trichlorotrifluoroethane	7216	Cartridge filter disposal	40100106	1,1,2-Trichloro-1,2,2-trifluoroethane	76131	20 lb/ton clothes cleaned	Based on tests and literature	97
Dry cleaning, trichlorotrifluoroethane	7216	Fugitive emissions	40100106	1,1,2-Trichloro-1,2,2-trifluoroethane	76131	20 - 40 lb/ton clothes cleaned	Based on tests and literature	97
Dry cleaning, trichlorotrifluoroethane	7216	Still residue disposal	40100106	1,1,2-Trichloro-1,2,2-trifluoroethane	76131	10 lb/ton clothes cleaned	Based on tests and literature	97
Dry cleaning, trichlorotrifluoroethane	7216	Washer/dryer/still	40100106	1,1,2-Trichloro-1,2,2-trifluoroethane	76131	0 lbton clothes cleaned	Based on typical refrigeration system at CFC drycleaning plant	97
Dye synthesis	2865	Fugitive emissions	301121	1,2-Dichlorobenzene	95501	0.1 lb/ton dye produced	General estimate, no specifics on controls	48
Dye synthesis	2865	Process emissions	301121	1,2-Dichlorobenzene	95501	0.80 lb/ton dye produced	General estimate, no specifics on controls	48
Dye synthesis	2865	Storage tank emissions	407	1,2-Dichlorobenzene	95501	0.1 lb/ton dye produced	General estimate, no specifics on controls	48
Electrical apparatus manufacture	36	Handling of Hg or its compounds	3	Mercury	7439976	8 lb/ton Hg used	Uncontrolled, based on engineering judgement	113
Epichlorohydrin production	2869	Fugitive emissions	30130980	Epichlorohydrin	106898	1.24 lb/ton epichlorohydrin produced	Uncontrolled, based on SOCMI VOC emission factors	109
Epichlorohydrin production	2869	Process vents	301309	Epichlorohydrin	106898	0.00094 lb/ton epichlorohydrin produced	Controlled, based on ratio of nationwide emis. totals & nationwide annual production rate	109
Epichlorohydrin production	2869	Storage facilities (includes storage tanks and transfer operations)	301309	Epichlorohydrin	106898	0.30 lb/ton epichlorohydrin produced	Control status unspecified, based on ratio of nationwide emis. totals & nationwide annual prod. rate	109
Epichlorohydrin production by hydrochlorination	2869	Absorption	301309	Allyl chloride	107051	4 lb/ton produced	Control unclear, based on mass balance and testing	99
Epichlorohydrin production by hydrochlorination	2869	Separation unit	301309	Allyl chloride	107051	4 lb/ton produced	Control unclear, based on mass balance and testing	99
Epichlorohydrin production by hydrochlorination	2869	Absorption	301309	Chlorine	7782505	0.001 lb/ton produced	Control unclear, based on mass balance and testing	99
Epichlorohydrin production by hydrochlorination	2869	Separation unit	301309	Chlorine	7782505	0.001 lb/ton produced	Control unclear, based on mass balance and testing	99
Epichlorohydrin production by hydrochlorination	2869	Separation unit	301309	Epichlorohydrin	106898	3 lb/ton produced	Control unclear, based on mass balance and testing	99

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Epichlorohydrin production by hydrochlorination	2869	Separation unit	301305	Hydrogen chloride	7647010	0.001 lb/ton produced	Control unclear, based on mass balance and testing	95
Epichlorohydrin production by hydrochlorination	2869	Separation unit	301305	1,1,1-Trichloropropane	7789891	1 lb/ton produced	Control unclear, based on mass balance and testing	95
Epichlorohydrin use as a feedstock in batch processes	28	Fugitive emissions	301	Epichlorohydrin	106898	14.2 lb/ton of epichlorohydrin used	Based on aggregate emis. & thruput est., represents no partic. fac., based on SOCMI VOC emis. fac.	109
Epichlorohydrin use as a feedstock in batch processes	28	Process vents	301	Epichlorohydrin	106898	1.12 lb/ton epichlorohydrin used	Based on aggregate emissions and throughput estimates, represents no particular facility	109
Epichlorohydrin use as a feedstock in batch processes	28	Storage facilities (includes storage tanks and transfer operations)	301	Epichlorohydrin	106898	0.94 lb/ton of epichlorohydrin used	Based on aggregate emissions and throughput estimates, represents no particular facility	109
Epoxy resins (continuous process) production	2821	Storage tank emissions	407	Epichlorohydrin	106898	0.6 lb/ton of product	Control status unspecified, based on one plant's estimates	109
Epoxy resins (continuous process) production	2821	Storage tank emissions	407	Epichlorohydrin	106898	0 lb/ton of product	Tanks vented to balloon header, based on one plant's estimates	109
Epoxy resins (continuous process) production	2821	Vapor recovery system	30101847	Epichlorohydrin	106898	0.01 lb/ton of product	98% efficient control device, based on one facility only	109
Ethyl chloride production by hydrochlorination	2869	Separation unit	301125	Chlorine	7782505	0.001 lb/ton produced	Control uncertain, based on mass balance and tests	95
Ethyl chloride production by hydrochlorination	2869	Separation unit	301125	Chloroethane	75003	5 lb/ton produced	Control uncertain, based on mass balance and tests	95
Ethyl chloride production by hydrochlorination of ethanol	2869	Fugitive emissions	301125	Chloroethane	75003	65,300 lb/yr	Reported as very conservative estimate, based on SOCMI emission factors	65
Ethyl chloride production by hydrochlorination of ethanol	2869	Process - general	30112515	Chloroethane	75003	5.84 lb/ton produced	Control status unclear, based on plant producing ethyl chloride by hydrochlorination of ethylene	65
Ethyl chloride production by hydrochlorination of ethylene	2869	Fugitive emissions	301125	Chloroethane	75003	65,300 lb/yr	Reported as very conservative estimate, based on SOCMI emission factors	65
Ethyl chloride production by hydrochlorination of ethylene	2869	Process - general	30112515	Chloroethane	75003	5.84 lb/ton produced	Control status unclear, based on Texas ACB Emission Inventory data for one source	65

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Ethyl chloride production by hydrochlorination	2869	Separation unit	301125	1,1-Dichloroethane	75343	12 lb/ton produced	Control uncertain, based on mass balance and tests	95
Ethyl chloride production by hydrochlorination of ethylene	2869	Process vents	30112515	1,2-Dichloroethane	107062	18.9 lb/ton ethyl chloride produced	Control status unspecified, aggregate estimate based on national emissions and production estimates	51
Ethyl chloride production by hydrochlorination	2869	Separation unit	301125	Hydrogen chloride	7647010	0.001 lb/ton produced	Control uncertain, based on mass balance and tests	95
Ethylbenzene production	2865	Fugitive emissions	30116980	Xylenes (mixed isomers)	1330207	0.1 lb/ton xylene used	Estimated	13
Ethylbenzene production	2865	Process - general	30116901	Xylenes (mixed isomers)	1330207	0.2 lb/ton xylene used	Estimated	13
Ethylbenzene production	2865	Storage	407036	Xylenes (mixed isomers)	1330207	0.1 lb/ton xylene used	Estimated	13
Ethylbenzene/styrene production	2865	Alkylation reactor area vents	30116902	Benzene	71432	0.6 lb/ton ethylbenz/styrene produced	Uncontrolled, for ethylbenzene production, based on model plant capacity of 6.61 x 10E8 lb/yr	132
Ethylbenzene/styrene production	2865	Alkylation reactor area vents	30116902	Benzene	71432	0.0006 lb/ton ethylbenz/styrene produced	Controlled, process heater 99+% efficiency, based on model plant capacity of 6.61 x 10E8 lb/yr	132
Ethylbenzene/styrene production	2865	Atmospheric/pressure column vents	301169	Benzene	71432	2.4 lb/ton ethylbenzene produced	Uncontrolled, based on model plant with capacity of 6.61 x 10E8 lb/yr	132
Ethylbenzene/styrene production	2865	Atmospheric/pressure column vents	301169	Benzene	71432	0.024-0.96 lb/ton ethylbenz/styrene prod	Controlled, flare 60-99% efficiency, based on model plant with capacity of 6.61 x 10E8 lb/yr	132
Ethylbenzene/styrene production	2865	Benzene/toluene vacuum vent	301169	Benzene	71432	6 lb/ton ethylbenz/styrene produced	Uncontrolled, model plant with capacity of 6.61 x 10E8 lb/yr	132
Ethylbenzene/styrene production	2865	Benzene/toluene vacuum vent	301169	Benzene	71432	0.06-2.4 lb/ton ethylbenz/styrene produc	Controlled, flare 60-99% efficiency, model plant with capacity of 6.61 x 10E8 lb/yr	132
Ethylbenzene/styrene production	2865	Fugitive emissions	30116980	Benzene	71432	0.22 lb/ton ethylbenz/styrene produced	Uncontrolled, model plant with capacity of 6.61 x 10E8 lb/yr	132
Ethylbenzene/styrene production	2865	Fugitive emissions	30116980	Benzene	71432	0.058 lb/ton ethylbenz/styrene produced	Controlled, detection and correction, 74% efficiency, model plant with capacity of 6.61 x 10E8 lb/yr	132
Ethylbenzene/styrene production	2865	Hydrogen separation tank	301169	Benzene	71432	0.006 lb/ton ethylbenz/styrene produced	Uncontrolled, model plant with capacity of 6.61 x 10E8 lb/yr	132
Ethylbenzene/styrene production	2865	Hydrogen separation tank	301169	Benzene	71432	0.00006-0.0024 lb/ton ethylbenz/styrene	Controlled, 60-99% efficiency, flare, model plant with capacity of 6.61 x 10E8 lb/yr	132

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Ethylbenzene/styrene production	2865	Other vacuum vents	301169	Benzene	71432	0.1 lb/ton ethylbenz/styrene produced	Uncontrolled, model plant with capacity of 4.61 x 10E8 lb/yr	132
Ethylbenzene/styrene production	2865	Other vacuum vents	301169	Benzene	71432	0.001-0.004 lb/ton ethylbenz/styr prod	Controlled, flare 60-99% efficiency, model plant with capacity of 4.61 x 10E8 lb/yr	132
Ethylbenzene/styrene production	2865	Secondary emissions	301169	Benzene	71432	0.134 lb/ton ethylbenz/styrene produced	Uncontrolled, based on model plant with capacity of 4.61 x 10E8 lb/yr	132
Ethylbenzene/styrene production	2865	Storage and handling emissions	407036	Benzene	71432	1.14 lb/ton ethylbenz/styrene produced	Uncontrolled, model plant with capacity of 4.61 x 10E8 lb/yr	132
Ethylbenzene/styrene production	2865	Storage and handling emissions	407	Benzene	71432	0.172 lb/ton ethylbenz/styrene produced	Controlled, floating roof, 85% efficiency, model plant with capacity of 4.61 x 10E8 lb/yr	132
Ethylbenzene/styrene production	2865	Storage and handling emissions	407036	Benzene	71432	0.00114 lb/ton ethylbenz/styrene produce	Controlled, vented to flare, 99% efficiency, model plant with capacity of 4.61 x 10E8 lb/yr	132
Ethylbenzene/styrene production	2865	Storage and handling emissions	407036	Benzene	71432	0.228 lb/ton ethylbenze/styrene produced	Controlled, refrigerated vent condenser, 80% efficiency, model plant w/ capac. of 4.61 x 10E8 lb/yr	132
Ethylbenzene/styrene production	2865	Benzene/toluene vacuum column	30116901	Styrene	100425	0.073 lb/ton ethylbenz/styrene produced	Control status unclear	96
Ethylbenzene/styrene production	2865	Nonbenzene/toluene vacuum columns	30116901	Styrene	100425	0.0328 lb/ton ethylbenz/styrene produced	Control status unclear	96
Ethylene amine production	2869	Entire process	301034	1,2-Dichloroethane	107062	18.18 lb/ton ethylene amine produced	Facilities using typical controls for 1976, aggregate est. based on national emis. & produc. est.	91
Ethylene dichloride production	2869	Fugitive emissions	30112509	Chloroethane	75003	9.54 x 10E-3 lb/ton EDC produced	Based on Texas ACB data for one source	65
Ethylene dichloride production	2869	Process - general	301125	Chloroethane	75003	4.5 x 10E-5 lb/ton EDC produced	Based on Texas ACB data for one source, partially controlled	65
Ethylene dichloride production	2869	Storage of by-products	30112509	Tetrachloroethylene	127184	4 x 10E-6 lb/ton EDC produced	One plant, based on est annual emis divided by ethylene dichloride prod cap, controlled w/pressure vessel/incineration	208
Ethylene dichloride production	2869	Process vents	30112509	Trichloroethylene	79016	8.0 x 10E-8 lb/ton EDC produced	One plant, based on est annual emissions divided by EDC production capacity, incineration control at > 98% efficiency	208

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Ethylene dichloride production - balanced process	2869	Column vents	301125	Carbon tetrachloride	56235	0.28 lb/ton EDC produced	Uncontrolled	163
Ethylene dichloride production - balanced process	2869	Column vents	301125	Carbon tetrachloride	56235	<8.4 x 10E-3 lb/ton EDC produced	Thermal oxidizer	163
Ethylene dichloride production - balanced process	2869	Liquid waste storage	30112509	Carbon tetrachloride	56235	0.0102 lb/ton EDC produced	Uncontrolled	163
Ethylene dichloride production - balanced process	2869	Liquid waste storage	30112509	Carbon tetrachloride	56235	0.00154 lb/ton EDC produced	Refrigerated condenser	163
Ethylene dichloride production - balanced process	2869	Oxychlorination vent - air process	30112501	Carbon tetrachloride	56235	2.4 lb/ton EDC produced	Uncontrolled, high value of range (0.58-2.4)	163
Ethylene dichloride production - balanced process	2869	Oxychlorination vent - air process	30112501	Carbon tetrachloride	56235	0.048 lb/ton EDC produced	Thermal oxidizer, high value of range (0.0116-0.048)	163
Ethylene dichloride production - balanced process	2869	Oxychlorination vent - oxygen process	30112501	Carbon tetrachloride	56235	0.36 lb/ton EDC produced	Uncontrolled, high value of range (0.088-0.36)	163
Ethylene dichloride production - balanced process	2869	Oxychlorination vent - oxygen process	30112501	Carbon tetrachloride	56235	0.0072 lb/ton EDC produced	Thermal oxidizer, high value of range (0.00174 - 0.0072)	163
Ethylene dichloride production - balanced process	2869	Column vents	30112501	Chloroform	67663	2 lb/ton EDC produced	Uncontrolled	164
Ethylene dichloride production - balanced process	2869	Column vents	30112501	Chloroform	67663	<0.04 lb/ton EDC produced	Thermal oxidizer	164
Ethylene dichloride production - balanced process	2869	Liquid waste storage	30112509	Chloroform	67663	0.006 lb/ton EDC produced	Uncontrolled	164
Ethylene dichloride production - balanced process	2869	Liquid waste storage	30112509	Chloroform	67663	0.0009 lb/ton EDC produced	Refrigerated condenser	164
Ethylene dichloride production - balanced process	2869	Oxychlorination vent - air process	30112501	Chloroform	67663	1.3 lb/ton EDC produced	Highest value reported in reference uncontrolled	164

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Ethylene dichloride production - balanced process	2869	Oxychlorination vent - air process	30112501	Chloroform	67663	0.026 lb/ton EDC produced	Highest value reported in reference thermal oxidizer	144
Ethylene dichloride production - balanced process	2869	Oxychlorination vent - oxygen process	30112501	Chloroform	67663	0.24 lb/ton EDC produced	Highest value in reference uncontrolled	144
Ethylene dichloride production - balanced process	2869	Oxychlorination vent - oxygen process	30112501	Chloroform	67663	0.0048 lb/ton EDC produced	Highest value in reference thermal oxidizer	144
Ethylene dichloride production - balanced process	2869	Column vents	301125	1,2-Dichloroethane	107062	6 lb/ton EDC produced	Uncontrolled, based on hypothetical plant with total EDC production capacity of 8.82 x 10E8 lb/yr	51
Ethylene dichloride production - balanced process	2869	Column vents	301125	1,2-Dichloroethane	107062	<0.12 lb/ton EDC produced	Controlled by thermal oxidizer, hypothetical plant w/ total EDC produc. cap. of 8.82 x 10E8 lb/yr	51
Ethylene dichloride production - balanced process	2869	Direct chlorination vent	30112502	1,2-Dichloroethane	107062	2.16 lb/ton EDC produced	Uncontrolled, based on hypothetical plant with total EDC production capacity of 8.82 x 10E8 lb/yr	51
Ethylene dichloride production - balanced process	2869	Direct chlorination vent	30112502	1,2-Dichloroethane	107062	<0.0432 lb/ton EDC produced	Controlled by thermal oxidizer, hypothetical plant w/ total EDC produc. cap. of 8.82 x 10E8 lb/yr	51
Ethylene dichloride production - balanced process	2869	Direct chlorination vent	30112502	1,2-Dichloroethane	107062	0.324-0.52 lb/ton EDC produced	Controlled by refrig. condens., hypothetical plant w/ total EDC produc. cap. of 8.82 x 10E8 lb/yr	51
Ethylene dichloride production - balanced process	2869	Oxychlorination, air process, absorber/stripper	30112901	1,2-Dichloroethane	107062	6.48-7.16 lb/ton of EDC produced	Uncontrolled, based on hypothetical plant with total EDC production capacity of 8.82 x 10E8 lb/yr	51
Ethylene dichloride production - balanced process	2869	Oxychlorination, air process, absorber/stripper	30112501	1,2-Dichloroethane	107062	<0.1296 lb/ton EDC produced	Controlled by thermal oxidizer, hypothetical plant w/ total EDC produc. cap. of 8.82 x 10E8 lb/yr	51
Ethylene dichloride production - balanced process	2869	Oxychlorination, air process, absorber/stripper	30112501	1,2-Dichloroethane	107062	<0.56 lb/ton EDC produced	Controlled by catalv. oxidizer, hypothetical plant w/ total EDC produc. cap. of 8.82 x 10E8 lb/yr	51
Ethylene dichloride production - balanced process	2869	Oxychlorination, air process, refrigerated condenser	30112501	1,2-Dichloroethane	107062	4.8 lb/ton EDC produced	Uncontrolled, based on hypothetical plant with total EDC production capacity of 8.82 x 10E8 lb/yr	51
Ethylene dichloride production - balanced process	2869	Oxychlorination, air process, refrigerated condenser	30112501	1,2-Dichloroethane	107062	<0.096 lb/ton EDC produced	Controlled by thermal oxidizer, hypothetical plant w/ total EDC produc. cap. of 8.82 x 10E8 lb/yr	51

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Ethylene dichloride production - balanced process	2869	Oxychlorination, oxygen process	30112501	1,2-Dichloroethane	107062	0.924 lb/ton EDC produced	Uncontrolled, based on hypothetical plant with total EDC production capacity of 8.82 x 10E8 lb/yr	51
Ethylene dichloride production - balanced process	2869	Oxychlorination, oxygen process	30112501	1,2-Dichloroethane	107062	<0.0184 lb/ton EDC produced	Controlled by thermal oxidizer, hypothetical plant w/ total EDC produc. cap. of 8.82 x 10E8 lb/yr	51
Ethylene dichloride production - balanced process	2869	Oxychlorination, oxygen process	30112501	1,2-Dichloroethane	107062	0.1386-0.34 lb/ton EDC produced	Controlled by refrig. condens., hypothetical plant w/ total EDC produc. cap. of 8.82 x 10E8 lb/yr	51
Ethylene dichloride production - balanced process	2869	Process fugitive emissions	301129	1,2-Dichloroethane	107062	0.53 lb/ton of EDC produced	Uncontrolled, based on hypothetical plant with total EDC production capacity of 8.82 x 10E8 lb/yr	51
Ethylene dichloride production - balanced process	2869	Process fugitive emissions	301129	1,2-Dichloroethane	107062	0.212 lb/ton EDC produced	Major leak detection and correction, hypothetical plant w/ total EDC prod. cap. of 8.82 x 10E8 lb/yr	51
Ethylene dichloride production - balanced process	2869	Secondary wastewater biotreatment	301129	1,2-Dichloroethane	107062	0.004-0.12 lb/ton EDC produced	Uncontrolled, based on biotreater emission data reported by two EDC production facilities	51
Ethylene dichloride production - balanced process	2869	Storage vents, in-process	301129	1,2-Dichloroethane	107062	0.0298 lb/ton EDC produced	Uncontrolled, based on hypothetical plant with total EDC production capacity of 8.82 x 10E8 lb/yr	51
Ethylene dichloride production - balanced process	2869	Storage vents, in-process	301129	1,2-Dichloroethane	107062	<0.0004 lb/ton EDC produced	Controlled by thermal oxidizer, hypothetical plant w/ total EDC produc. cap. of 8.82 x 10E8 lb/yr	51
Ethylene dichloride production - balanced process	2869	Storage vents, in-process	301129	1,2-Dichloroethane	107062	0.0044 lb/ton EDC produced	Controlled by refrig. condens., based on hypothetical plant w/ total EDC prod. cap. - 8.82 x 10E8 lb	51
Ethylene dichloride production - balanced process	2869	Storage vents, produced	301129	1,2-Dichloroethane	107062	0.1466 lb/ton EDC produced	Uncontrolled, based on hypothetical plant with total EDC production capacity of 8.82 x 10E8 lb/yr	51
Ethylene dichloride production - balanced process	2869	Storage vents, produced	301129	1,2-Dichloroethane	107062	<0.003 lb/ton EDC produced	Controlled by thermal oxidizer, hypothetical plant w/ total EDC produc. cap. of 8.82 x 10E8 lb/yr	51
Ethylene dichloride production - balanced process	2869	Storage vents, produced	301129	1,2-Dichloroethane	107062	0.022 lb/ton EDC produced	Controlled by refrig. condens., hypothetical plant w/ total EDC produc. cap. of 8.82 x 10E8 lb/yr	51
Ethylene dichloride production - direct chlorination	2869	Absorption	30112502	Ethylene	74851	6.2 lb/ton produced	Control uncertain, based on tests and mass balance	95

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Ethylene dichloride production - direct chlorination	2869	Absorption	30112502	Hydrogen chloride	7647010	0.02 lb/ton produced	Control uncertain, based on tests and mass balance	95
Ethylene dichloride production - direct chlorination	2869	Absorption	30112502	Trichloroethylene	79016	0.02 lb/ton produced	Control uncertain, based on tests and mass balance	95
Ethylene dichloride production - oxyhydrochlorination	2869	Absorption	30112501	Carbon tetrachloride	56235	0.006 lb/ton produced	Control unclear, based on mass balance and testing	95
Ethylene dichloride production - oxyhydrochlorination	2869	Separation unit	30112501	Carbon tetrachloride	56235	0.188 lb/ton produced	Control unclear, based on mass balance and testing	95
Ethylene dichloride production - oxyhydrochlorination	2869	Absorption	30112501	Chlorine	7782505	0.0038 lb/ton produced	Control unclear, based on mass balance and testing	95
Ethylene dichloride production - oxyhydrochlorination	2869	Separation unit	30112501	Chlorine	7782505	0.01 lb/ton produced	Control unclear, based on mass balance and testing	95
Ethylene dichloride production - oxyhydrochlorination	2869	Separation unit	30112501	Chloroethane	75003	0.094 lb/ton produced	Control unclear, based on mass balance and testing	95
Ethylene dichloride production - oxyhydrochlorination	2869	Absorption	30112501	Chloroform	67663	0.01 lb/ton produced	Control unclear, based on mass balance and testing	95
Ethylene dichloride production - oxyhydrochlorination	2869	Separation unit	30112501	Chloroform	67663	0.084 lb/ton produced	Control unclear, based on mass balance and testing	95
Ethylene dichloride production - oxyhydrochlorination	2869	Separation unit	30112501	1,1-Dichloroethane	75343	0.008 lb/ton produced	Control unclear, based on mass balance and testing	95
Ethylene dichloride production - oxyhydrochlor. of ethylene	2869	Absorption unit	30112501	Methylene chloride	75092	<0.006 lb/ton EDC produced	Control status and basis unspecified	95
Ethylene dichloride production - oxyhydrochlor. of ethylene	2869	Separation unit	30112501	Methylene chloride	75092	0.003 lb/ton EDC produced	Control status and basis unspecified	95
Ethylene dichloride production - oxyhydrochlorination	2869	Absorption	30112501	1,1,1-Trichloroethane	71556	0.01 lb/ton produced	Control unclear, based on mass balance and testing	95

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Ethylene dichloride production - oxyhydrochlorination	2869	Absorption	30112501	Vinyl chloride	75014	0.02 lb/ton produced	Control unclear, based on mass balance and testing	95
Ethylene dichloride production - oxyhydrochlorination	2869	Separation unit	30112501	Vinyl chloride	75014	0.024 lb/ton produced	Control unclear, based on mass balance and testing	95
Ethylene dichloride production - oxyhydrochlorination	2869	Separation unit	30112501	Vinylidene chloride	75354	0.00018 lb/ton produced	Control unclear, based on mass balance and testing	95
Ethylene dichloride/vinyl chloride production	2869	EDC finishing column	30112544	Vinyl chloride	75014	1.0 lb VC emission/ton VCM prod.	Industry average, control level at existing plants unknown, variable	26
Ethylene dichloride/vinyl chloride production	2869	Fugitive emissions	301125	Vinyl chloride	75014	2.4 lb/ton EDC-VC produced	Uncontrolled, rough estimate	27
Ethylene dichloride/vinyl chloride production	2869	Fugitive emissions	301125	Vinyl chloride	75014	0.044 lb/ton EDC-VC produced	Rough estimate of actual emissions, control level at 9 existing plants unknown	27
Ethylene dichloride/vinyl chloride production	2869	Fugitive emissions	301125	Vinyl chloride	75014	2.43 lb VC emission/ton VCM produced	Industry average, control level at existing plants unknown, variable	26
Ethylene dichloride/vinyl chloride production	2869	Oxychlorination process	30112501	Vinyl chloride	75014	0.728 lb VC emission/ton VCM prod.	Industry average, control level at existing plants unknown, variable	26
Ethylene dichloride/vinyl chloride production	2869	Oxychlorination vent	30112501	Vinyl chloride	75014	0.72 lb/ton EDC-VC product	Uncontrolled, rough estimate	27
Ethylene dichloride/vinyl chloride production	2869	Oxychlorination vent	30112501	Vinyl chloride	75014	0.158 lb/ton EDC-VC produced	Rough estimate, actual emissions, control level at 9 existing plants unknown	27
Ethylene dichloride/vinyl chloride production	2869	Primary control	301125	Vinyl chloride	75014	5.8 lb/ton EDC-VC product	Uncontrolled, rough estimate	27
Ethylene dichloride/vinyl chloride production	2869	Primary control	301125	Vinyl chloride	75014	0.02 lb/ton EDC-VC product	Rough estimate, actual emissions, degree of control at 9 existing plants unknown	27
Ethylene dichloride/vinyl chloride production	2869	Process water	301125	Vinyl chloride	75014	0.0014 lb VC emission/ton VCM prod.	Industry average, control level at existing plants unknown, variable	26
Ethylene dichloride/vinyl chloride production	2869	Relief valves	301125	Vinyl chloride	75014	0.0124 lb/ton EDC-VC product	Control unknown for actual emissions	27
Ethylene dichloride/vinyl chloride production	2869	VCM finishing column	30112545	Vinyl chloride	75014	4.8 lb VC emission/ton VCM prod.	Industry average, control level at existing plants unknown, variable	26
Ethylene oxide production by air-oxidation process	2869	Purge absorber vent	30117402	Ethylene oxide	75218	0.01-2 lb/ton	Uncontrolled, based on source tests	63

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Ethylene oxide production by air-oxidation process	2869	Purge absorber vent	30117402	Ethylene oxide	75218	0 lb/ton	Controlled by catalytic oxidation or emergency flare, based on source tests	63
Ethylene oxide production by air-oxidation process	2869	Purge absorber vent	30117402	Ethylene oxide	75218	0.08 lb/ton	Controlled 80 percent by thereal oxidation, based on source tests	63
Ethylene oxide production by air-oxidation process	2869	Storage and handling emissions	301174	Ethylene oxide	75218	5.2 lb/ton	Uncontrolled, based on source tests	63
Ethylene oxide production by air-oxidation process	2869	Storage and handling emissions	301174	Ethylene oxide	75218	0 lb/ton	Controlled by recycle or scrubber with incineration or flaring, based on source tests	63
Ethylene oxide production by air-oxidation process	2869	Stripper vent	30117421	Ethylene oxide	75218	<1.4 lb/ton	Uncontrolled, based on source tests	63
Ethylene oxide production by air-oxidation process	2869	Stripper vent	30117421	Ethylene oxide	75218	0 lb/ton	Controlled by boiler, based on source tests	63
Ethylene oxide production by oxygen-oxidation process	2869	Carbon dioxide desorber vent	30117410	Ethylene oxide	75218	0.00012-1.5 lb/ton	Uncontrolled, based on engineering judgement for hypothetical plants	63
Ethylene oxide production by oxygen-oxidation process	2869	Carbon dioxide desorber vent	30117410	Ethylene oxide	75218	0.12 lb/ton	Controlled by carbonate flasher/vent condenser, based on engineering judgement for hypoth. plants	63
Ethylene oxide production by oxygen-oxidation process	2869	Carbon dioxide desorber vent	30117410	Ethylene oxide	75218	0 lb/ton	Controlled by CO2 recovery or methanol unit, based on engineering judgement for hypoth. plants	63
Ethylene oxide production by oxygen-oxidation process	2869	Cooling towers	301174	Ethylene oxide	75218	0.14 lb/ton	Uncontrolled, based on engineering judgement for hypothetical plants	63
Ethylene oxide production by oxygen-oxidation process	2869	Cooling towers	301174	Ethylene oxide	75218	0.028 lb/ton	Increased stripper column effectiveness, based on engineering judgement for hypothetical plants	63
Ethylene oxide production by oxygen-oxidation process	2869	Main process purge vent	30117411	Ethylene oxide	75218	0.002-0.004 lb/ton	Uncontrolled, based on engineering judgement for hypothetical plants	63
Ethylene oxide production by oxygen-oxidation process	2869	Main process purge vent	30117411	Ethylene oxide	75218	0 lb/ton	Controlled by boiler or incinerator, based on engineering judgement for hypothetical plants	63
Ethylene oxide production by oxygen-oxidation process	2869	Storage and handling emissions	301174	Ethylene oxide	75218	9.2 lb/ton	Uncontrolled, based on engineering judgement for hypothetical plants	63
Ethylene oxide production by oxygen-oxidation process	2869	Storage and handling emissions	301174	Ethylene oxide	75218	0 lb/ton	Controlled by aqueous scrubber, based on engineering judgement for hypothetical plants	63

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Ethylene oxide production by oxygen-oxidation process	2869	Stripper vent	30117421	Ethylene oxide	75218	<0.2 lb/ton	Uncontrolled, based on engineering judgement for hypothetical plants	43
Ethylene oxide production by oxygen-oxidation process	2869	Stripper vent	30117421	Ethylene oxide	75218	<0.004 lb/ton	Controlled by various reabsorbers/incin./water scrubbers/vent absorbers, based on eng. judgement	43
Ethylene production	286	Fugitive emission - flanges	30119749	Ethylene	74851	0.0048 lb/hr	Uncontrolled emission factor	214
Ethylene production	286	Fugitive emission - sampling connections	30119749	Ethylene	74851	0.033 lb/hr	Uncontrolled emission factor	214
Ethylene production	286	Fugitive emission - compressors	30119749	Ethylene	74851	0.394 lb/hr	Uncontrolled emission factor	214
Ethylene production	286	Fugitive emission - open-ended lines	30119749	Ethylene	74851	0.0061 lb/hr	Uncontrolled emission factor	214
Ethylene production	286	Fugitive emission - gas pressure relief valve	30119749	Ethylene	74851	0.2407 lb/hr	Uncontrolled emission factor	214
Ethylene production	286	Fugitive emission - valves	30119749	Ethylene	74851	0.00050 lb/hr	Uncontrolled emission factor for a heavy liquid	214
Ethylene production	286	Fugitive emission - valves	30119749	Ethylene	74851	0.0396 lb/hr	Uncontrolled emission factor for a light liquid	214
Ethylene production	286	Fugitive emission - valves	30119749	Ethylene	74851	0.0189 lb/hr	Uncontrolled emission factor for a gas	214
Ethylene production	286	Fugitive emission - pump seals	30119749	Ethylene	74851	0.0297 lb/hr	Uncontrolled emission factor for a heavy liquid	214
Ethylene production	286	Fugitive emission - pump seals	30119749	Ethylene	74851	0.1278 lb/hr	Uncontrolled emission factor for a light liquid	214
Ethylene production from naphtha/gas oil	2911	Charge gas compressor lubricating oil vent, dual compressor train	30119745	Benzene	71432	8 x 10E-4 lb/ton ethylene produced	Uncontr., hypothetical plant using 50% naphtha/50% gas oil as feed w/ ethylene cap. 1.2 x 10E9 lb/yr	132
Ethylene production from naphtha/gas oil	2911	Charge gas compressor lubricating oil vent, single compressor train	30119745	Benzene	71432	4 x 10E-4 lb/ton ethylene produced	Uncontr., hypothetical plant using 50% naphtha/50% gas oil as feed w/ ethylene cap. 1.2 x 10E9 lb/yr	132
Ethylene production from naphtha/gas oil	2911	Intermittent emissions, dual compressor train	301197	Benzene	71432	0.2022 lb/ton ethylene produced	Uncontr., hypothetical plant using 50% naphtha/50% gas oil as feed w/ ethylene cap. 1.2 x 10E9 lb/yr	132
Ethylene production from naphtha/gas oil	2911	Intermittent emissions, dual compressor train	301197	Benzene	71432	0.0202 - 0.004 lb/ton ethylene produced	Controlled, flares (90-98% efficiency)	132

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Ethylene production from naphtha/gas oil	2911	Intermittent emissions, single compressor train	301197	Benzene	71432	1.584 lb/ton ethylene produced	Uncontr., hypothetical plant using 50% naphtha/50% gas oil as feed w/ ethylene cap. 1.2 x 10E9 lb/yr	132
Ethylene production from naphtha/gas oil	2911	Intermittent emissions, single compressor train	301197	Benzene	71432	0.1584-0.0316 lb/ton ethylene produced	Controlled, flares (90-98% efficiency)	132
Ethylene production from naphtha/gas oil	2911	Storage tank emissions	407036	Benzene	71432	0.294 lb/ton ethylene produced	Uncontrolled	132
Ethylene production from naphtha/gas oil	2911	Storage tank emissions	407	Benzene	71432	0.0442 lb/ton ethylene produced	Controlled, floating roof tank, 85% efficiency	132
Ethylene production from naphtha/gas oil	4925	Fugitive emissions	30119749	Benzene	71432	0.0918 lb/ton ethylene produced	Uncontrolled	132
Ethylene production from naphtha/gas oil	4925	Fugitive emissions	30119749	Benzene	71432	0.0176 lb/ton ethylene produced	Detection/correction of leaks	132
Ethylene production from naphtha/gas oil	4925	Secondary sources (wastewater, etc.)	301197	Benzene	71432	0.0434 lb/ton ethylene produced	Uncontrolled	132
Fabric production-dodecanedioic acid intermediate	2399	Equipment leak		1,3-Butadiene	106990	9.73 tons/yr	Controlled (unspecified), and uncontrolled, based on one plant's data	144
Ferroalloy production	33	Electric arc furnace, sealed, silicomanganese	30300405	Polycyclic organic matter		00.0022 lb/Mw-hr energy consumed by furnace	High pressure drop, wet scrubber represents gaseous and particulate POM	114
Ferroalloy production	3313	Electric arc furnace, sealed, silicomanganese	30300702	Antimony	7440360	2.8 x 10E-7 lb/mw-hr energy consumed by furnace	Controlled, venturi scrubber	149
Ferroalloy production	3313	Electric arc furnace, open, ferromanganese	30300701	Antimony	7440360	1.04 x 10E-3 lb/mw-hr energy consumed by furnace	Uncontrolled	149
Ferroalloy production	3313	Electric arc furnace, semi-sealed, ferrosilicon	30300702	Antimony	7440360	9.48 x 10E-3 lb/mw-hr energy consumed by furnace	Uncontrolled	149
Ferroalloy production	3313	Electric arc furnace, open, ferromanganese	30300701	Arsenic	7440382	0.0244 lb/mw-hr energy consumed by furnace	Uncontrolled	149
Ferroalloy production	3313	Electric arc furnace, semi-sealed, ferrosilicon	30300702	Arsenic	7440382	0.0019 lb/mw-hr energy consumed by furnace	Uncontrolled	149
Ferroalloy production	3313	Electric arc furnace, sealed, silicomanganese	30300702	Arsenic	7440382	0.00013 lb/mw-hr energy consumed by furnace	Controlled, venturi scrubber	149
Ferroalloy production	3313	Electric arc furnace ferrosilicon production, semi-sealed furnace	30300702	Benzo(a)pyrene	50328	1.0 g/Mw-hr energy consumed by furnace	Low energy wet scrubber, represents gaseous and particulate POM	114

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Ferroalloy production	3313	Electric arc furnace, open, ferromanganese	30300702	Beryllium	7440417	5.5 x 10E-6 lb/mw-hr energy consumed by furnace	Uncontrolled	149
Ferroalloy production	3313	Electric arc furnace, sealed, silicomanganese	30300702	Beryllium	7440417	3.7 x 10E-8 lb/mw-hr energy consumed by furnace	Controlled, venturi scrubber	149
Ferroalloy production	3313	Electric arc furnace, semi-sealed, ferrosilicon	30300702	Beryllium	7440417	2.8 x 10E-6 lb/mw-hr energy consumed by furnace	Uncontrolled	149
Ferroalloy production	3313	Electric arc furnace, open, ferromanganese	30300701	Cadmium	7440439	0.003 lb/mw-hr energy consumed by furnace	Uncontrolled	149
Ferroalloy production	3313	Electric arc furnace, semi-sealed, ferrosilicon	30300702	Cadmium	7440439	0.004 lb/mw-hr energy consumed by furnace	Uncontrolled	149
Ferroalloy production	3313	Electric arc furnace, open, ferromanganese	30300701	Chromium	7440473	0.020 lb/mw-hr energy consumed by furnace	Uncontrolled	149
Ferroalloy production	3313	Electric arc furnace, semi-sealed, ferrosilicon	30300702	Chromium	7440473	0.012 lb/mw-hr energy consumed by furnace	Uncontrolled	149
Ferroalloy production	3313	FeMn (80%)	30300619	Copper	7440508	0.012 lb/ton alloy	Uncontrolled, open furnace	93,97
Ferroalloy production	3313	FeSi (50%)	30300601	Copper	7440508	0.032 lb/ton alloy	Uncontrolled, open/closed furnace, baghouse achieves 98%	93,97
Ferroalloy production	3313	FeSi (75%)	30300602	Copper	7440508	0.1 lb/ton alloy	Uncontrolled, open/closed furnace, baghouse achieves 98%	93,97
Ferroalloy production	3313	FeSi (90%)	30300603	Copper	7440508	0.22 lb/ton alloy	Uncontrolled, open furnace	93,97
Ferroalloy production	3313	Electric arc furnace, open, ferromanganese	30300701	Copper	7440508	0.018 lb/Mw-hr energy consumed by furnace	Uncontrolled	149
Ferroalloy production	3313	Electric arc furnace, sealed, silicomanganese	30300702	Lead	7439921	4.04 lb/mw-hr energy consumed by furnace	Controlled, venturi scrubber	149
Ferroalloy production	3313	General emissions	303004	Manganese	7439965	4.614 lb/ton ferroalloy produced	Based on engineering estimates	13
Ferroalloy production	3313	Electric arc furnace, open, ferromanganese	30300701	Mercury	7439976	0.0027 lb/mw-hr energy consumed by furnace	Uncontrolled	149
Ferroalloy production	3313	Electric arc furnace, sealed, silicomanganese	30300701	Mercury	7439976	9.3 x 10E-5 lb/mw-hr energy consumed by furnace	Controlled, venturi scrubber	149
Ferroalloy production	3313	Electric arc furnace, semi-sealed, ferrosilicon	30300702	Mercury	7439976	8.36 x 10E-6 lb/mw-hr energy consumed by furnace	Uncontrolled	149

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INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Ferroalloy production	3313	Electric arc furnace, semi-sealed, ferrosilicon	30300702	Nickel	7440020	3.8 mg/mw-hr energy consumed by furnace	Uncontrolled	149
Ferroalloy production	3313	Electric arc furnace, open, ferromanganese	30300701	Nickel	7440020	1,000 mg/mw-hr energy consumed by furnace	Uncontrolled	149
Ferroalloy production	3313	Electric arc furnace, sealed, ferromanganese	30300701	Polycyclic organic matter		0.343 lb/Mw-hr energy consumed by furnace	Uncontrolled, represents gaseous and particulate POM	114
Ferroalloy production	3313	Electric arc furnace, semi-sealed, ferrosilicon	30300702	Polycyclic organic matter		0.2002 lb/Mw-hr energy consumed by furnace	Low energy wet scrubber, represents gaseous and particulate POM	114
Ferroalloy production	3313	Electric arc furnace, sealed, silicomanganese	30300701	Selenium	7782492	4.6 x 10E-7 lb/mw-hr energy consumed by furnace	Controlled, venturi scrubber	149
Ferroalloy production	3313	Electric arc furnace, semi-sealed, ferrosilicon	30300702	Selenium	7782492	0.00075 lb/mw-hr energy consumed by furnace	Uncontrolled	149
Ferroalloy production	3313	Electric arc furnace, open, ferromanganese	30300701	Selenium	7782492	0.00082 lb/mw-hr energy consumed by furnace	Uncontrolled	149
Ferroalloy production	3313	Electric arc furnace, open, ferromanganese	30300701	Silver	7440224	0.00095 lb/mw-hr energy consumed by furnace	Uncontrolled	149
Ferroalloy production	3313	Electric arc furnace, semi-sealed, ferrosilicon	30300702	Silver	7440224	0.0151 lb/mw-hr energy consumed by furnace	Uncontrolled	149
Ferroalloy production	3313	Electric arc furnace, sealed, silicomanganese	30300702	Silver	7440224	3.0E x 10E-7 lb/mw-hr energy consumed by furnace	Controlled, venturi scrubber	149
Ferroalloy production	3313	Electric arc furnace, open, ferromanganese	30300701	Thallium	7440280	0.0016 lb/mw-hr energy consumed by furnace	Uncontrolled	149
Ferroalloy production	3313	Electric arc furnace, sealed, silicomanganese	30300702	Thallium	7440280	6.4 x 10E-7 lb//mw-hr energy consumed by furnace	Controlled, venturi scrubber	149
Ferroalloy production	3313	Electric arc furnace, semi-sealed, ferrosilicon	30300703	Thallium	7440280	0.00011 lb/mw-hr energy consumed by furnace	Uncontrolled	149
Ferrochromium production by electric arc furnace process	3313	Casting, ferrochrome-silicon product	30300617	Chromium	7440473	0.072 lb/ton product	Composite of controlled and uncontrolled sources, as total chromium	141
Ferrochromium production by electric arc furnace process	3313	Casting, high-carbon ferrochrome product	30300617	Chromium	7440473	0.14 lb/ton product	Composite of controlled and uncontrolled sources, as total chromium	141
Ferrochromium production by electric arc furnace process	3313	Closed furnace, ferrochrome-silicon product	30300702	Chromium	7440473	4.4 x 10E-8 lb/Mwhr	Scrubber, as total chromium, assumes chromium is 0.4% of controlled PM	141

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Ferrochromium production by electric arc furnace process	3313	Crushing/grinding, ferrochrome-silicon product	303004	Chromium	7440473	0.22 lb/ton product	Composite of controlled and uncontrolled sources, as total chromium	161
Ferrochromium production by electric arc furnace process	3313	Crushing/grinding, high-carbon ferrochrome product	303004	Chromium	7440473	0.42 lb/ton product	Composite of controlled and uncontrolled sources, as total chromium	161
Ferrochromium production by electric arc furnace process	3313	Dry, crush, size ore	30300611	Chromium	7440473	0.68 lb/ton ore processed	Composite of controlled and uncontrolled, as total chromium	161
Ferrochromium production by electric arc furnace process	3313	Furnace, chrome ore/lime melt	30300704	Chromium	7440473	1.38 lb/Mwhr	Uncontrolled, as total chromium, assumes chromium is 15% of PM by weight	161
Ferrochromium production by electric arc furnace process	3313	Furnace, ferrochrome-silicon product	30300704	Chromium	7440473	1.102 lb/Mwhr	Average of 0.2-0.78 range, as total Cr uncontrolled, assumes Cr is 0.4-1.4% of PM emissions by wt.	161
Ferrochromium production by electric arc furnace process	3313	Furnace, high-carbon ferrochrome and charge Cr product	30300704	Chromium	7440473	0.59 lb/Mwhr	Uncontrolled, as total chromium, assumes chromium is 14% of PM by weight	161
Ferrochromium production by electric arc furnace process	3313	Open furnace, ferrochrome-silicon product	30300401	Chromium	7440473	0.007 lb/Mwhr	Scrubber, as total chromium, assumes 0.4% total controlled PM is chromium	161
Ferrochromium production by electric arc furnace process	3313	Open furnace, ferrochrome-silicon product	30300401	Chromium	7440473	0.001 lb/Mwhr	Fabric filter, controlled chromium, assumes 0.4% total controlled PM is chromium	161
Ferrochromium production by electric arc furnace process	3313	Open furnace, high-carbon ferrochrome and charge Cr product	303004	Chromium	7440473	0.132 lb/Mwhr	Scrubber, as total chromium, assumes 14% PM is chromium by weight	161
Ferrochromium production by electric arc furnace process	3313	Open furnace, high-carbon ferrochrome product	303004	Chromium	7440473	0.004 lb/Mwhr	Fabric filter, as total chromium, assumes 14% PM is chromium by weight	161
Ferrochromium production by electric arc furnace process	3313	Open furnace, high-carbon ferrochrome product	303004	Chromium	7440473	0.008 lb/Mwhr	ESP, as total chromium, assumes 14% PM is chromium by weight	161
Ferrochromium production by electric arc furnace process	3313	Receipt/store ore in stock pile	30300613	Chromium	7440473	0.68 lb/ton ore processed	Composite of controlled and uncontrolled, as total chromium	161
Ferrochromium production by electric arc furnace process	3313	Treat molten alloy with Cl in ladle, high-carbon ferrochrome product	303004	Chromium	7440473	6.6 lb/ton product	Composite of controlled and uncontrolled sources, as total chromium	161

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Ferrochromium production by electric arc furnace process	3313	Treating molten alloy with Cl in ladle, ferrochrome-silicon product	303006	Chromium	7440473	3.4 lb/ton product	Composite of controlled and uncontrolled, as total chromium	141
Ferrochromium production by electric arc furnace process	3313	Weigh/feed ore to electric arc furnace	30300614	Chromium	7440473	0.62 lb/ton ore processed	Composite of controlled and uncontrolled, as total chromium	141
Ferromanganese production by electric arc furnace process	3313	Casting	303	Manganese	7439965	0.48 lb/ton of Mn product	Control status unspecified, calculated based on engineering judgement	107
Ferromanganese production by electric arc furnace process	3313	Crushing/grinding/sizing	303	Manganese	7439965	0.16 lb/ton of Mn product	Control status unspecified, calculated based on engineering judgement	107
Ferromanganese production by electric arc furnace process	3313	Ladle treatment	303	Manganese	7439965	7.5 lb/ton of Mn product	Control status unspecified, calculated based on engineering judgement	107
Ferromanganese production by electric arc furnace process	3313	Open submerged-arc electric furnace	303006	Manganese	7439965	13.2 lb/ton of product	Uncontrolled, based on AP-42 data for ferroalloy production	107
Ferromanganese production by electric arc furnace process	3313	Open submerged-arc electric furnace	303006	Manganese	7439965	6.16 lb/MWh consumed by furn. operation	Uncontrolled, based on AP-42 data for ferroalloy production	107
Ferromanganese production by electric arc furnace process	3313	Open submerged-arc electric furnace	303006	Manganese	7439965	0.4 lb/ton of product	Controlled by scrubbers, calculated from source tests of total particulate emissions	107
Ferromanganese production by electric arc furnace process	3313	Open submerged-arc electric furnace	303006	Manganese	7439965	0.189 lb/MWh consumed by furn. operation	Controlled by scrubbers, calculated from source tests of total particulate emissions	107
Ferromanganese production by electric arc furnace process	3313	Sealed submerged-arc electric furnace	303	Manganese	7439965	19.2 lb/ton of product	Uncontrolled, based on AP-42 data for ferroalloy production	107
Ferromanganese production by electric arc furnace process	3313	Sealed submerged-arc electric furnace	303	Manganese	7439965	9.46 lb/MWh consumed by furn. operation	Uncontrolled, based on AP-42 data for ferroalloy production	107
Ferromanganese production by electric arc furnace process	3313	Sealed submerged-arc electric furnace	303	Manganese	7439965	0.008 lb/MWh consumed by furn. operation	Controlled by scrubbers, calculated from source tests of total particulate emissions	107
Ferromanganese production by electric arc furnace process	3313	Semi-sealed submerged-arc electric furnace	30300701	Manganese	7439965	8.2 lb/ton of product	Uncontrolled, based on AP-42 data for ferroalloy production	107

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Ferromanganese production by electric arc furnace process	3313	Semi-sealed submerged-arc electric furnace	30300701	Manganese	7439965	2.33 lb/MWh consumed by furn. operation	Uncontrolled, based on AP-42 data for ferroalloy production	107
Ferromanganese production by electric arc furnace process	3313	Semi-sealed submerged-arc electric furnace	30300701	Manganese	7439965	0.08 lb/ton of product	Controlled by scrubbers, calculated from source tests of total particulate emissions	107
Ferromanganese production by electric arc furnace process	3313	Semi-sealed submerged-arc electric furnace	30300701	Manganese	7439965	0.037 lb/MWh consumed by furn. operation	Controlled by scrubbers, calculated from source tests of total particulate emissions	107
Ferrovanadium production	3313	Electric furnace	303	Vanadium	7440622	49 lb/ton vanadium processed	Uncontrolled, based on industry estimate (late 1960s/early 1970s)	56
Ferrovanadium production	3313	Materials handling	303	Vanadium	7440622	12 lb/ton vanadium processed	Control status/basis unspecified	56
Fertilizer application		Anhydrous ammonia fertilizer	302999	Ammonia	7664417	19 lbs/ton fertilizer	Sources emitting > 100 tons NH3/year	179
Fertilizer application	0711	Application process	302	Cadmium	7440439	6 x 10E-3 lb/ton fertilizer applied	Engineering estimate, mass balance	38
Fertilizer application	212	Beef cattle manure	3020202	Ammonia	7664417	1.8 lbs / animal	Sources emitting > 100 tons NH3/year	179
Fertilizer application	213	Swine manure	30203801	Ammonia	7664417	3.1 lbs / animal	Sources emitting > 100 tons NH3/year	179
Fertilizer application	214	Sheep manure	30203801	Ammonia	7664417	2.0 lbs / animal	Sources emitting > 100 tons NH3/year	179
Fertilizer application	241	Dairy cow manure	302030	Ammonia	7664417	36 lbs / animal	Sources emitting > 100 tons NH3/year	179
Fertilizer application	251	Chicken (broilers) manure	30202101	Ammonia	7664417	0.024 lb / animal	Sources emitting > 100 tons NH3/year	179
Fertilizer application	253	Turkey manure	30202101	Ammonia	7664417	0.16 lb / animal	Sources emitting > 100 tons NH3/year	179
Fertilizer application	259	Laying hen manure	30202101	Ammonia	7664417	0.19 lb / animal	Sources emitting > 100 tons NH3/year	179
Fertilizer application, superphosphate fertilizer	0711	Application process	302	Cadmium	7440439	2 x 10E-4 lb/ton fertilizer applied		38,41
Fertilizer mixing	2875	Ammoniation-granulation process	30104501	Chlorine	7782505	0.0132 lb/ton fertilizer		133
Fish processing plants		Fish scrap cookers - fresh	30201201	Diethylmethanamine, N,N-	75503	0.3 lb/ton fish	Uncontrolled	97
Fish processing plants		Fish scrap cookers - stale	30201202	Diethylmethanamine, N,N-	75503	3.8 lb/ton fish	Uncontrolled	97
Fish processing plants		Fish scrap cookers - fresh	30201201	Hydrogen sulfide	7783064	0.01 lb/ton fish	Uncontrolled	97

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Fish processing plants		Fish scrap cookers - stale	30201202	Hydrogen sulfide	7783064	0.2 lb/ton fish	Uncontrolled	97
Flame attenuation wool glass fiber production	3296	R-11 product production, total line	315012	Formaldehyde	50000	9.7 lb/ton finished product	Controlled with an HVAF	173
Flame attenuation wool glass fiber production	3296	R-11 product production, curing	315012	Formaldehyde	50000	1.0 lb/ton finished product	Controlled with an HVAF	173
Flame attenuation wool glass fiber production	3296	Ductboard production, total line	315012	Formaldehyde	50000	19.5 lb/ton finished product	Controlled with an HVAF	173
Flame attenuation wool glass fiber production	3296	Ductboard production, curing and cooling	315012	Formaldehyde	50000	0.80 lb/ton finished product	Controlled with an HVAF	173
Flame attenuation wool glass fiber production	3296	R-11 product production, curing	315012	Phenol	108952	0.2 lb/ton finished product	Controlled with a HVAF	173
Flame attenuation wool glass fiber production	3296	R-11 product production, curing	315012	Phenol	108952	2.7 lb/ton finished product	Controlled with a HVAF	173
Flame attenuation wool glass fiber production	3296	Ductboard production, total line	315012	Phenol	108952	9.6 lb/ton finished product	Controlled with a HVAF	173
Flame attenuation wool glass fiber production	3296	Ductboard production, curing and cooling	315012	Phenol	108952	0.1 lb/ton finished product	Controlled with a HVAF	173
Fluorocarbon 11/12 production	2869	Distillation column	30112702	Carbon tetrachloride	56235	0.046 lb/ton FC 11/12 produced	Refrigerated condenser and CCl4 scrubber	163
Fluorocarbon 11/12 production	2869	Reactor vent	30112701	Carbon tetrachloride	56235	0.084 lb/ton FC 11/12 produced	Uncontrolled	163
Fluorocarbon 11/12 production	2869	Storage	407040	Carbon tetrachloride	56235	1.48 lb/ton FC 11/12 produced	Uncontrolled, high value of range (0.58-1.48)	163
Fluorocarbon 11/12 production	2869	Storage	407040	Carbon tetrachloride	56235	0.22 lb/ton FC 11/12 produced	Refrigerated condenser, high value of range (0.058-0.22)	163
Fluorocarbon 22 production	2869	Chloroform storage	407040	Chloroform	67663	5.08 lb/ton fluorocarbon 22 produced	Uncontrolled, fixed roof tank	164
Fluorocarbon 22 production	2869	Chloroform storage	407040	Chloroform	67663	0.6 lb/ton fluorocarbon 22 produced	Controlled with refrigerated condenser	164
Fluorocarbon 22 production	2869	Fugitive emissions	30112790	Chloroform	67663	<0.091 lb/hr	Uncontrolled	164
Foodstuff fumigation	20	Fugitive emissions		Ethylene oxide	75218	600 lb/ton ethylene oxide used	Uncontrolled, based on source tests	44

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Foodstuff fumigation	20	Process vents		Ethylene oxide	75218	400 lb/ton ethylene oxide used	Uncontrolled, based on source tests	44
Foodstuff fumigation	20	Wastewater emissions		Ethylene oxide	75218	1000 lb/ton ethylene oxide used	Uncontrolled, based on source tests	44
Foodstuff fumigation, with recycling water-sealed pump	20	Fugitive emissions		Ethylene oxide	75218	400 lb/ton ethylene oxide used	Uncontrolled, based on source tests	44
Foodstuff fumigation, with recycling water-sealed pump	20	Process - general		Ethylene oxide	75218	1400 lb/ton ethylene oxide used	Uncontrolled, based on source tests	44
Formaldehyde production, metal oxide catalyst process	2869	Absorber	30112005	Formaldehyde	50000	0.94 lb/ton of 37% formal. soln. produce	Uncontrolled, based on hypothetical plant with formal. production capacity of 9.92 x 10E7 lb/yr	106
Formaldehyde production, metal oxide catalyst process	2869	Absorber	30112005	Formaldehyde	50000	<0.018 lb/ton of 37% formal. soln. prod.	Controlled by thermal oxidation, hypothetical plant with formal. produc. cap. of 9.92 x 10E7 lb/yr	106
Formaldehyde production, metal oxide catalyst process	2869	Formaldehyde storage	407	Formaldehyde	50000	0.06 lb/ton of 37% formal. soln. produce	Uncontrolled, based on hypothetical plant with formaldehyde production cap. of 9.92 x 10E7 lb/yr	106
Formaldehyde production, metal oxide catalyst process	2869	Formaldehyde storage	407	Formaldehyde	50000	0.004 lb/ton of 37% formal. soln. prod.	Controlled by vent scrubber, hypothetical plant with formal. production cap. of 9.92 x 10E7 lb/yr	106
Formaldehyde production, metal oxide catalyst process	2869	Handling	301120	Formaldehyde	50000	0.02 lb/ton of 37% formal. soln. produce	Uncontrolled, based on hypothetical plant with formal. production capacity of 9.92 x 10E7 lb/yr	106
Formaldehyde production, metal oxide catalyst process	2869	Handling	301120	Formaldehyde	50000	0.0008 lb/ton of 37% formal. soln. prod.	Controlled by vapor recovery, hypothetical plant with formal. production cap. of 9.92 x 10E7 lb/yr	106
Formaldehyde production, silver catalyst process	2869	Absorber	30112005	Formaldehyde	50000	0.76 lb/ton of 37% formal. solution prod	Uncontrolled, based on hypothetical plant with formaldehyde production cap. of 9.92 x 10E7 lb/yr	106
Formaldehyde production, silver catalyst process	2869	Absorber	30112005	Formaldehyde	50000	<0.152 lb/ton of 37% formal. soln. prod.	Controlled by thermal oxidation, based on hypothetical plant w/ formal. prod. cap.-9.92 x 10E7 lb/yr	106
Formaldehyde production, silver catalyst process	2869	Absorber	30112005	Formaldehyde	50000	0.152 lb/ton of 37% formal. soln. prod.	Controlled by flare, based on hypothetitical plant with formal. production cap. of 9.92 x 10E7 lb/yr	106
Formaldehyde production, silver catalyst process	2869	Formaldehyde storage	407	Formaldehyde	50000	0.06 lb/ton of 37% formal. soln. produce	Uncontrolled, based on hypothetical plant with formaldehyde production capacity of 9.92 x 10E7 lb/yr	106
Formaldehyde production, silver catalyst process	2869	Formaldehyde storage	407	Formaldehyde	50000	0.004 lb/ton of 37% formal. soln. prod.	Controlled by vent scrubber, hypothetical plant with formal. production cap. of 9.92 x 10E7 lb/yr	106

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Formaldehyde production, silver catalyst process	2869	Formaldehyde storage	407	Formaldehyde	50000	<0.0012 lb/ton of 37% formal. soln. prod	Controlled by thermal oxidation, hypothetical plant with formal. produc. cap. of 9.92 x 10E7 lb/yr	106
Formaldehyde production, silver catalyst process	2869	Handling	301120	Formaldehyde	50000	0.02 lb/ton of 37% formal. soln. produce	Uncontrolled, based on hypothetical plant with formal. production capacity of 9.92 x 10E7 lb/yr	106
Formaldehyde production, silver catalyst process	2869	Handling	301120	Formaldehyde	50000	0.0008 lb/ton of 37% formal. soln. prod.	Controlled by vapor recovery, hypothetical plant with formal. production cap. of 9.92 x 10E7 lb/yr	106
Formaldehyde production, silver catalyst process	2869	Product fractionator	30112006	Formaldehyde	50000	0.44 lb/ton of 37% formal. soln. produce	Uncontrolled, based on hypothetical plant with formaldehyde production cap. of 9.92 x 10E7 lb/yr	106
Formaldehyde production, silver catalyst process	2869	Product fractionator	30112006	Formaldehyde	50000	0 lb/ton of 37% formal. solution pr	Recycle to absorber, based on hypothetical plant with formaldehyde produc. cap. of 9.92 x 10E7 lb/yr	106
Formaldehyde production, silver catalyst process	2869	Product fractionator	30112006	Formaldehyde	50000	0.034 lb/ton of 37% formal. soln. prod.	Controlled by water scrubber, hypothetical plant with formal. production cap. of 9.92 x 10E7 lb/yr	106
Formaldehyde production, silver catalyst process	2869	Startup vent	301120	Formaldehyde	50000	0.2 lb/ton of 37% formal. soln. produced	Uncontrolled, based on hypothetical plant with formaldehyde production cap. of 9.92 x 10E7 lb/yr	106
Frit smelting	2899	Rotary furnace	30501301	Fluoride	16984488	5 lb/ton charge	Uncontrolled	97
Fumigation or sterilization		Retort operation		Propylene oxide	75569	470 lb/sterilization event	Based on data for a facility using 18,326 lb PO/year, engineering judgement	24
Fungicide application	0711	Application process	302	Cadmium	7440439	1 x 10E-5 lb/gal fungicide applied	Engineering estimate, mass balance	38
Fungicide application	0711	Application process	302	Cadmium	7440439	1.669 x 10E-4 lb/gal fungicide applied		41
Fungicide application - pentachloronitrobenzene	072	Application process	302	Hexachlorobenzene	118741	2 lbs/ton fungicide used	Assumes content = 0.1%, all volatilized - worst case situations	49
Gasoline blending at refineries	2911	Storage and handling of EDC and blended product	306	1,2-Dichloroethane	107062	2 lb/ton of EDC used	Control status and basis unspecified	51
Gasoline blending at refineries	2911	Storage and handling of EDC and blended product	403	1,2-Dichloroethane	107062	0.00168 lb/10E3 gal loaded gasoline prod	Control status and basis unspecified	51
Gasoline blending at refineries	5541	Storage and handling of EDB and blended gasoline	403	1,2-Dibromoethane	106934	0.000168 lb/1000 gal loaded gas produced	Engineering estimate using an emission factor for EDC	50,51
Gasoline loading at bulk plants	4491	Gasoline loading racks, splash loading	404002	Benzene	71432	0.0718 lb/10E3 gal gasoline	Terminal with 251,000 gal/day, four storage tanks for gasoline	132
Gasoline loading at bulk plants	4491	Gasoline loading racks, submerged loading	404002	Benzene	71432	0.0292 lb/10E3 gal gasoline	Terminal with 251,000 gal/day, four storage tanks for gasoline	132
Gasoline loading at bulk plants	4491	Submerged loading (balance service)	404002	Benzene	71432	0.0492 lb/10E3 gal gasoline	Terminal with 251,000 gal/day, four storage tanks for gasoline	132

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Gasoline loading at bulk terminals and bulk plants	5171	Balance service	40600114	Benzene	71432	0.0492 lb benz vap/10E3 gal gas transfer	Uncontrolled, assuming a benzene/VOC ratio of 0.006, no basis given	132
Gasoline loading at bulk terminals and bulk plants	5171	Splash	40600136	Benzene	71432	0.0292 lb benz vap/10E3 gal gas transfer	Uncontrolled, assuming a benzene/VOC ratio of 0.006, no basis given	132
Gasoline loading at bulk terminals and bulk plants	5171	Submerged (either top or bottom submerged)	40600131	Benzene	71432	0.0718 lb benz vap/10E3 gal gas transfer	Uncontrolled, assuming a benzene/VOC ratio of 0.006, no basis given	132
Gasoline loading at bulk terminals and bulk plants	5171	Bulk terminal vapor processor	40600152	Gasoline	8006619	0.0499 lb/1000 gal gasoline loaded	Controlled by carbon absorber, average of 33 tests, range was 0.0028 - 0.13 lb/1000 gal	188
Gasoline loading at bulk terminals and bulk plants	5171	Bulk terminal vapor processor	40600152	Gasoline	8006619	0.18 - 0.35 lb/1000 gal gasoline loaded	Controlled by refrigeration	188
Gasoline loading at bulk terminals and bulk plants	5171	Bulk terminal vapor processor	40600152	Gasoline	8006619	0.0017 - 0.01 lb/1000 gal gasoline loaded	Controlled by thermal oxidation	188
Gasoline loading in marine vessels	4491	Barge, gas-freed, any cargo	406002	Benzene	71432	0.0125 lb/10E3 gal gas transferred	Uncontrolled, assuming a benzene/VOC ratio of 0.006, no basis given	132
Gasoline loading in marine vessels	4491	Barge, typical situation, any cargo	406002	Benzene	71432	0.0209 lb/10E3 gal gas transferred	Uncontrolled, assuming a benzene/VOC ratio of 0.006, no basis given	132
Gasoline loading in marine vessels	4491	Barge, uncleaned, volatile previous cargo	40600230	Benzene	71432	0.0234 lb/10E3 gal gas transferred	Uncontrolled, assuming a benzene/VOC ratio of 0.006, no basis given	132
Gasoline loading in marine vessels	4491	Ship/ocean barge any condition, nonvolatile previous cargo	4060023	Benzene	71432	0.00417 lb/10E3 gal gas transferred	Uncontrolled, assuming a benzene/VOC ratio of 0.006, no basis given	132
Gasoline loading in marine vessels	4491	Ship/ocean barge ballasted, volatile previous cargo	40600235	Benzene	71432	0.01 lb/10E3 gal gas transferred	Uncontrolled, assuming a benzene/VOC ratio of 0.006, no basis given	132
Gasoline loading in marine vessels	4491	Ship/ocean barge cleaned, volatile previous cargo	4060023	Benzene	71432	0.00918 lb/10E3 gal gas transferred	Uncontrolled, assuming a benzene/VOC ratio of 0.006, no basis given	132
Gasoline loading in marine vessels	4491	Ship/ocean barge gas-freed, volatile previous cargo	4060023	Benzene	71432	0.00417 lb/10E3 gal gas transferred	Uncontrolled, assuming a benzene/VOC ratio of 0.006, no basis given	132
Gasoline loading in marine vessels	4491	Ship/ocean barge typical situation, any cargo	4060023	Benzene	71432	0.0108 lb/10E3 gal gas transferred	Uncontrolled, assuming a benzene/VOC ratio of 0.006, no basis given	132
Gasoline loading in marine vessels	4491	Ship/ocean barge uncleaned, volatile previous cargo	40600237	Benzene	71432	0.016 lb/10E3 gal gas transferred	Uncontrolled, assuming a benzene/VOC ratio of 0.006, no basis given	132
Gasoline loading in marine vessels	4491	Tanker ballasting	40600241	Benzene	71432	0.00501 lb/10E3 gal gas transferred	Uncontrolled, assuming a benzene/VOC ratio of 0.006, no basis given	132

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Gasoline loading in marine vessels	4491	Transit	40600242	Benzene	71432	0.016 lb (per wt)/10E3 gal gas transfer	Uncontrolled, assuming a benzene/VOC ratio of 0.006, no basis given	132
Gasoline loading of tank car/truck with leaded gasoline	517	Splash loading balance service	40600144	1,2-Dichloroethane	107062	0.0016 lb/10E3 gal transferred	Uncontrolled, calculated based on engineering judgement	91
Gasoline loading of tank car/truck with leaded gasoline	517	Splash loading normal service	40600136	1,2-Dichloroethane	107062	0.002245 lb/10E3 gal transferred	Uncontrolled, calculated based on engineering judgement	91
Gasoline loading of tank trucks at bulk plants	5171	Splash loading - dedicated normal service	404002	1,2-Dibromoethane	106934	1.37 x 10E-4 lb/10E3 gal throughput	Calculated from gasoline vapor estimates	90
Gasoline loading of tank trucks at bulk plants	5171	Splash loading - vapor balance service	404002	1,2-Dibromoethane	106934	9.43 x 10E-5 lb/10E3 gal throughput	Calculated from gasoline vapor estimates	90
Gasoline loading of tank trucks at bulk plants	5171	Submerged loading - dedicated normal service	404002	1,2-Dibromoethane	106934	8.67 x 10E-5 lb/10E3 gal throughput	Calculated from gasoline vapor estimates	90
Gasoline loading of tank trucks at bulk plants	5171	Submerged loading - vapor balance service	404002	1,2-Dibromoethane	106934	9.43 x 10E-5 lb/10E3 gal throughput	Calculated from gasoline vapor estimates	90
Gasoline loading of tank trucks at bulk terminals	5171	Splash loading - dedicated normal service	404001	1,2-Dibromoethane	106934	1.37 x 10E-4 lb/10E3 gal transferred	Calculated from gasoline vapor estimates	90
Gasoline loading of tank trucks at bulk terminals	5171	Splash loading - vapor balance service	404001	1,2-Dibromoethane	106934	9.43 x 10E-5 lb/10E3 gal transferred	Calculated from gasoline vapor estimates	90
Gasoline loading of tank trucks at bulk terminals	5171	Submerged loading - dedicated normal service	404001	1,2-Dibromoethane	106934	8.67 x 10E-5 lb/10E3 gal transferred	Calculated from gasoline vapor estimates	90
Gasoline loading of tank trucks at bulk terminals	5171	Submerged loading - vapor balance service	404001	1,2-Dibromoethane	106934	9.43 x 10E-5 lb/10E3 gal transferred	Calculated from gasoline vapor estimates	90
Gasoline loading of tank trucks at bulk plants	5171	Splash loading - dedicated normal service	404002	1,2-Dichloroethane	107062	0.001402 lb/10E3 gal throughput	Calculated from gasoline vapor estimates	90
Gasoline loading of tank trucks at bulk plants	5171	Splash loading - vapor balance service	404002	1,2-Dichloroethane	107062	9.4 x 10E-4 lb/10E3 gal throughput	Calculated from gasoline vapor estimates	90
Gasoline loading of tank trucks at bulk plants	5171	Submerged loading - dedicated normal service	404002	1,2-Dichloroethane	107062	5.76 x 10E-4 lb/10E3 gal throughput	Calculated from gasoline vapor estimates	90
Gasoline loading of tank trucks at bulk plants	5171	Submerged loading - vapor balance service	404002	1,2-Dichloroethane	107062	9.4 x 10E-4 lb/10E3 gal throughput	Calculated from gasoline vapor estimates	90
Gasoline loading of tank trucks at bulk terminals	5171	Splash loading - dedicated normal service	404001	1,2-Dichloroethane	107062	0.0014 lb/10E3 gal transferred	Calculated from gasoline vapors estimates	90
Gasoline loading of tank trucks at bulk terminals	5171	Splash loading - vapor balance service	404001	1,2-Dichloroethane	107062	9.4 x 10E-4 lb/10E3 gal transferred	Calculated from gasoline vapors estimates	90

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Gasoline loading of tank trucks at bulk terminals	5171	Submerged loading - dedicated normal service	404001	1,2-Dichloroethane	107062	5.78 x 10E-4 lb/10E3 gal transferred	Calculated from gasoline vapors estimates	90
Gasoline loading of tank trucks at bulk terminals	5171	Submerged loading - vapor balance service	404001	1,2-Dichloroethane	107062	9.6 x 10E-4 lb/10E3 gal transferred	Calculated from gasoline vapors estimates	90
Gasoline loading of tank trucks at bulk plants	5171	Splash loading - dedicated normal service	404002	Gasoline	8006619	11.93 lb/10E3 gal throughput	Engineering estimate, RVP = 10 psia	97
Gasoline loading of tank trucks at bulk plants	5171	Splash loading - vapor balance service	404002	Gasoline	8006619	8.18 lb/10E3 gal throughput	Engineering estimate, RVP = 10 psia	97
Gasoline loading of tank trucks at bulk plants	5171	Submerged loading - dedicated normal service	404003	Gasoline	8006619	4.92 lb/10E3 gal throughput	Engineering estimate, RVP = 10 psia	97
Gasoline loading of tank trucks at bulk plants	5171	Submerged loading - vapor balance service	404002	Gasoline	8006619	8.18 lb/10E3 gal throughput	Engineering estimate, RVP = 10 psia	97
Gasoline loading of tank trucks at bulk terminals	5171	Splash loading - dedicated normal service	404001	Gasoline	8006619	11.93 lb/10E3 gal transferred	Engineering estimate using RVP of 10 psia	97
Gasoline loading of tank trucks at bulk terminals	5171	Splash loading - vapor balance service	404001	Gasoline	8006619	8.18 lb/10E3 gal transferred	Engineering estimate using RVP of 10 psia	97
Gasoline loading of tank trucks at bulk terminals	5171	Submerged loading - dedicated normal service	404001	Gasoline	8006619	4.92 lb/10E3 gal transferred	Engineering estimate using RVP of 10 psia	97
Gasoline loading of tank trucks at bulk terminals	5171	Submerged loading - vapor balance service	404001	Gasoline	8006619	8.18 lb/10E3 gal transferred	Engineering estimate using RVP of 10 psia	97
Gasoline marketing activities	5541	Automobile refueling displacement losses	40600401	Benzene	71432	0.0459 lb/10E3 gal gasoline	Uncontrolled, based on benz./vapor ratio of 0.006 typical bulk plt w/ gas thruput of 5019 gal/day	132
Gasoline marketing activities	5541	Automobile refueling displacement losses, Stage II	406004	Benzene	71432	0.0067 lb/10E3 gal gasoline	Controlled, based on benz./vapor ratio of 0.006 typical bulk plt w/ gas thruput of 5019 gal/day	132
Gasoline marketing activities	5541	Spillage	40600402	Benzene	71432	0.00417 lb/10E3 gal gasoline throughput	Controlled, based on benz./vapor ratio of 0.006 typical bulk plt w/ gas thruput of 5019 gal/day	132
Gasoline marketing activities	5541	Vehicle refueling, vapor loss	40600301	Benzene	71432	0.066 lb/gal of gas pumped		4
Gasoline marketing activities	5541	Vehicle refueling, vapor loss	40600301	1,3-Butadiene	106990	3.94 lb/gal of gas pumped	Listed as N-butane/1,3-butadiene emission rate	4
Gasoline marketing activities	5541	Refueling operations - displacement losses (controlled)	406004	1,2-Dibromoethane	106934	1.43 x 10E-5 lb/1000 gal throughput	Calculated from gasoline vapor estimates	97
Gasoline marketing activities	5541	Refueling operations - displacement losses (uncontrolled)	406004	1,2-Dibromoethane	106934	1.43 x 10E-4 lb/1000 gal throughput	Calculated from gasoline vapor estimates	97

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Gasoline marketing activities	5541	Refueling operations - spillage	404004	1,2-Dibromoethane	106934	8.68 x 10E-6 lb/1000 gal throughput	Calculated from gasoline vapor estimates	97
Gasoline marketing activities	5541	Refueling operations - displacement losses (controlled)	404004	1,2-Dichloroethane	107062	0.000146 lb/1000 gal throughput	Calculated from gasoline vapor estimates	97
Gasoline marketing activities	5541	Refueling operations - displacement losses (uncontrolled)	404004	1,2-Dichloroethane	107062	0.00146 lb/1000 gal throughput	Calculated from gasoline vapor estimates	97
Gasoline marketing activities	5541	Refueling operations - spillage	404004	1,2-Dichloroethane	107062	8.85 x 10E-5 lb/1000 gal throughput	Calculated from gasoline vapor estimates	97
Gasoline marketing activities	5541	Vehicle refueling operations, displacement losses	40600403	1,2-Dichloroethane	107062	0.00175 lb/10E3 gal loaded gas transfer	Uncontrolled, calculated based on engineering judgement	91
Gasoline marketing activities	5541	Vehicle refueling operations, displacement losses	40600403	1,2-Dichloroethane	107062	0.000175 lb/10E3 gal loaded gas transfer	Controlled, calculated based on engineering judgement	91
Gasoline marketing activities	5541	Vehicle refueling operations, spillage	40600402	1,2-Dichloroethane	107062	0.000133 lb/10E3 gal loaded gas transfer	Uncontrolled, calculated based on engineering judgement	91
Gasoline marketing activities	5541	Vehicle refueling, vapor loss	40600301	Ethylbenzene	100414	0.0198 lb/gal of gas pumped	Listed as emission rate for ethylbenzene/2,3-dimethylhexane	4
Gasoline marketing activities	5541	Refueling operations - displacement losses (controlled)	404004	Gasoline	8006619	1.10 lb/1000 gal throughput	Engineering estimate, RVP = 10 psia	97
Gasoline marketing activities	5541	Refueling operations - displacement losses (uncontrolled)	404004	Gasoline	8006619	11.01 lb/1000 gal throughput	Engineering estimate, RVP = 10 psia	97
Gasoline marketing activities	5541	Refueling operations - spillage	404004	Gasoline	8006619	0.668 lb/1000 gal throughput	Engineering estimate, RVP = 10 psia	97
Gasoline marketing activities	5541	Vehicle refueling, vapor loss	40600301	Propylene	115071	0.0 lb/gal of gas pumped	Listed as propylene/propane emission rate	4
Gasoline marketing activities	5541	Automobile refueling displacement losses	40600401	Toluene	108883	0.0994 lb/ton gasoline consumed	Engineering calculations	13
Gasoline marketing activities	5541	Vehicle refueling, vapor loss	40600301	Toluene	108883	0.176 lb/gal of gas pumped	Listed as toluene/2,3-dimethylhexane emission rate	4
Gasoline marketing activities	5541	Automobile refueling displacement losses	40600401	1,3-Xylene	108383	0.0171 lb/ton gasoline	Engineering estimate, based on AP-42 VOC emission factor	13

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Gasoline marketing activities	5541	Automobile refueling displacement losses	40600401	1,4-Xylene	106423	0.00662 lb/ton gasoline	Engineering estimate, based on AP-42 VOC emission factor	13
Gasoline marketing activities	5541	Automobile refueling displacement losses	40600401	1,2-Xylene	95476	0.00662 lb/ton gasoline	Engineering estimate, based on AP-42 VOC emission factor	13
Gasoline marketing activities	5541	Automobile refueling displacement losses	40600401	Xylenes (mixed isomers)	1330207	0.0294 lb/ton gasoline	Engineering estimate, based on AP-42 VOC emission factor	13
Gasoline marketing activities	5541	Vehicle refueling, vapor loss	40600301	Xylenes (mixed isomers)	1330207	0.0485 lb/gal of gas pumped	For p- and m-xylene	4
Gasoline marketing activities	5541	Vehicle refueling, vapor loss	40600301	Xylenes (mixed isomers)	1330207	0.0352 lb/gal of gas pumped	Listed as emission rate for o-xylene and/or unknown C9 paraffins	4
Gasoline storage at bulk plants	4491	Storage tanks, fixed roof breathing loss	404002	Benzene	71432	0.03 lb/10E3 gal gasoline	Based on benzene/vapor ratio of 0.006, typical bulk plant w/ gas throughput of 5019 gal/day	132
Gasoline storage at bulk plants	4491	Storage tanks, fixed roof draining loss	404002	Benzene	71432	0.0225 lb/10E3 gal gasoline	Terminal with 251,000 gal/day, four storage tanks for gasoline	132
Gasoline storage at bulk plants	4491	Storage tanks, fixed roof filling loss	404002	Benzene	71432	0.0576 lb/10E3 gal gasoline	Terminal with 251,000 gal/day, four storage tanks for gasoline	132
Gasoline storage at bulk plants	5171	Storage tanks - breathing loss	404002	1,2-Dibromoethane	106934	3.07 x 10E-9 lb/10E3 gal throughput	Calculated from gasoline vapor estimates	50
Gasoline storage at bulk plants	5171	Storage tanks - draining losses	404002	1,2-Dibromoethane	106934	2.30 x 10E-9 lb/10E3 gal throughput	Calculated from gasoline vapor estimates	50
Gasoline storage at bulk plants	5171	Storage tanks - filling losses	404002	1,2-Dibromoethane	106934	5.86 x 10E-9 lb/10E3 gal throughput	Calculated from gasoline vapor estimates	50
Gasoline storage at bulk plants	5171	Storage tanks - breathing loss	404002	1,2-Dichloroethane	107062	3.14 x 10E-8 lb/10E3 gal throughput	Calculated from gasoline vapor estimates	50
Gasoline storage at bulk plants	5171	Storage tanks - draining losses	404002	1,2-Dichloroethane	107062	2.35 x 10E-8 lb/10E3 gal throughput	Calculated from gasoline vapor estimates	50
Gasoline storage at bulk plants	5171	Storage tanks - filling losses	404002	1,2-Dichloroethane	107062	5.98 x 10E-8 lb/10E3 gal throughput	Calculated from gasoline vapor estimates	50
Gasoline storage at bulk plants	5171	Storage tanks - breathing loss	404002	Gasoline	8006619	2.67 x 10E-4 lb/10E3 gal throughput	Uncontrolled, engineering estimate, assume fixed roof	50
Gasoline storage at bulk plants	5171	Storage tanks - draining loss	404002	Gasoline	8006619	2 x 10E-4 lb/10E3 gal throughput	Uncontrolled, engineering estimate, assume fixed roof	50
Gasoline storage at bulk plants	5171	Storage tanks - filling losses	404002	Gasoline	8006619	5.09 x 10E-4 lb/10E3 gal throughput	Uncontrolled, engineering estimate, assume fixed roof	50

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INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Gasoline storage at bulk terminals	2911	External floating roof, working loss	404001	Benzene	71432	(0.46 x 10E-7 Bl/kg/yr, 0 is throughput	Based on a capacity of 36,000 bbls	132
Gasoline storage at bulk terminals	2911	Fixed-roof storage tanks - breathing losses	404001	Benzene	71432	1.10 x 10E-7 lb/year tank of gasoline	Based on terminal with 251,000 gal/day and four storage tanks for gasoline	132
Gasoline storage at bulk terminals	2911	Fixed-roof storage tanks - working losses	404001	Benzene	71432	4.41 x 10E-7 lb/year tank of gasoline	Based on terminal with 251,000 gal/day and four storage tanks for gasoline	132
Gasoline storage at bulk terminals	2911	Storage loss, primary seal, external floating roof	404001	Benzene	71432	1.1 x 10E-7 lb/year/tank of gasoline	Based on a capacity of 36,000 bbls	132
Gasoline storage at bulk terminals	2911	Storage loss, secondary metallic shoe seal, external floating roof	404001	Benzene	71432	4.41 x 10E-8 lb/year/tank of gasoline	Based on a capacity of 36,000 bbls	132
Gasoline storage at bulk terminals	5171	Fixed-roof storage tanks - breathing losses	404001	1,2-Dibromoethane	106934	2.44 x 10E-6 lb/10E3 gal throughput	Calculated from gasoline vapor estimates	50
Gasoline storage at bulk terminals	5171	Fixed-roof storage tanks - working losses	404001	1,2-Dibromoethane	106934	9.46 x 10E-6 lb/10E3 gal throughput	Calculated from gasoline vapor estimates	50
Gasoline storage at bulk terminals	5171	Floating-roof storage tanks - storage losses	404001	1,2-Dibromoethane	106934	2.66 x 10E-6/10E3 gal throughput	Calculated from gasoline vapor estimates	50
Gasoline storage at bulk terminals	5171	Floating-roof storage tanks - working losses	404001	1,2-Dibromoethane	106934	1.93 x 10E-12 lb/10E3 gal throughput	Calculated from gasoline vapor estimates	50
Gasoline storage at bulk terminals	5171	Fixed-roof storage tanks - breathing losses	404001	1,2-Dichloroethane	107062	2.49 x 10E-8 lb/10E3 gal throughput	Calculated from gasoline vapors estimates	50
Gasoline storage at bulk terminals	5171	Fixed-roof storage tanks - working losses	404001	1,2-Dichloroethane	107062	9.68 x 10E-8 lb/10E3 gal throughput	Calculated from gasoline vapors estimates	50
Gasoline storage at bulk terminals	5171	Floating-roof storage tanks - storage losses	404001	1,2-Dichloroethane	107062	2.71 x 10E-8 lb/10E3 gal throughput	Calculated from gasoline vapors estimates	50
Gasoline storage at bulk terminals	5171	Floating-roof storage tanks - working losses	404001	1,2-Dichloroethane	107062	1.97 x 10E-11 lb/10E3 gal throughput	Calculated from gasoline vapors estimates	50
Gasoline storage at bulk terminals	5171	Fixed-roof storage tanks - breathing losses	404001	Gasoline	8006619	0.212 lb/10E3 gal throughput	Converted from lb/yr, assume 365 days of operation, equal throughput for each tank	50
Gasoline storage at bulk terminals	5171	Fixed-roof storage tanks - working losses	404001	Gasoline	8006619	0.822 lb/10E3 gal throughput	Converted from lb/yr, assume 365 days of operation, equal throughput for each tank	50
Gasoline storage at bulk terminals	5171	Floating-roof storage tanks - storage losses	404001	Gasoline	8006619	0.231 lb/10E3 gal throughput	Converted from lb/yr, assume 365 days of operation, equal throughput for each tank	50
Gasoline storage at bulk terminals	5171	Floating-roof storage tanks - working losses	404001	Gasoline	8006619	1.68 x 10E-7 lb/10E3 gal throughput	Converted from lb/yr, assume 365 days of operation, equal throughput for each tank	50

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Gasoline storage at service stations	5541	Underground storage tanks, breathing losses	40600307	Benzene	71432	0.00584 lb/10E3 gal gasoline	Terminal with 251,000 gal/day, four storage tanks for gasoline	132
Gasoline storage at service stations	5541	Underground storage tanks, tank filling losses (balanced submerged)	40600306	Benzene	71432	0.00167 lb/10E3 gal gasoline	Terminal with 251,000 gal/day, four storage tanks for gasoline	132
Gasoline storage at service stations	5541	Underground storage tanks, tank filling losses (splash fill)	40600301	Benzene	71432	0.0693 lb/10E3 gal gasoline	Terminal with 251,000 gal/day, four storage tanks for gasoline	132
Gasoline storage at service stations	5541	Underground storage tanks, tank filling losses (submerged fill)	40600302	Benzene	71432	0.0442 lb/10E3 gal gasoline	Terminal with 251,000 gal/day, four storage tanks for gasoline	132
Gasoline storage at service stations	5541	Balanced submerged filling of underground tanks	40600306	1,2-Dibromoethane	106934	3.84 x 10E-6 lb/1000 gal throughput	Calculated from gasoline vapor estimates	97
Gasoline storage at service stations	5541	Splash filling of underground tanks	40600301	1,2-Dibromoethane	106934	1.49 x 10E-6 lb/1000 gal throughput	Calculated from gasoline vapor estimates	97
Gasoline storage at service stations	5541	Submerged filling of underground tanks	40600302	1,2-Dibromoethane	106934	9.81 x 10E-5 lb/1000 gal throughput	Calculated from gasoline vapor estimates	97
Gasoline storage at service stations	5541	Tank breathing and emptying	406003	1,2-Dibromoethane	106934	1.3 x 10E-5 lb/1000 gal throughput	Calculated from gasoline vapor estimates	97
Gasoline storage at service stations	5541	Balanced submerged filling of underground tanks	40600306	1,2-Dichloroethane	107062	4.42 x 10E-5 lb/1000 gal throughput	Calculated from gasoline vapor estimates	97
Gasoline storage at service stations	5541	Filling underground tank (splash filling), loaded gasoline	40600301	1,2-Dichloroethane	107062	0.00217 lb/10E3 gal transferred	Uncontrolled, calculated based on engineering judgement	51
Gasoline storage at service stations	5541	Splash filling of underground tanks	40600301	1,2-Dichloroethane	107062	0.00153 lb/1000 gal throughput	Calculated from gasoline vapor estimates	97
Gasoline storage at service stations	5541	Submerged filling of underground tanks	40600302	1,2-Dichloroethane	107062	0.000976 lb/1000 gal throughput	Calculated from gasoline vapor estimates	97
Gasoline storage at service stations	5541	Tank breathing and emptying	406003	1,2-Dichloroethane	107062	1.337 x 10E-4 lb/1000 gal throughput	Calculated from gasoline vapor estimates	97
Gasoline storage at service stations	5541	Balanced submerged filling of underground tanks	40600306	Gasoline	8006619	0.334 lb/1000 gal throughput	Engineering estimate, RVP = 10 psia	97
Gasoline storage at service stations	5541	Splash filling of underground tanks	40600301	Gasoline	8006619	11.92 lb/1000 gal throughput	Engineering estimate, RVP = 10 psia	97

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SEE CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Gasoline storage at service stations	5541	Submerged filling of underground tanks	470600302	Gasoline	8006619	7.344 lb/1000 gal throughput	Engineering estimate. RVP = 10 psia	97
Gasoline storage at service stations	5541	Tank breathing and emptying	406003	Gasoline	8006619	1.0 lb/1000 gal throughput	Engineering estimate. RVP = 10 psia	97
Gasoline use		Automobile emissions		Toluene	108883	2.2 x 10E-5 lb/vehicle mile traveled	Engineering calculations	13
Gasoline use		Automobile emissions		1,3-Xylene	108383	3.11 x 10E-6 lb/vehicle mile traveled	Engineering estimate, based on AP-42 VOC emission factor	13
Gasoline use		Automobile emissions		1,3-Xylene	108383	9.17 x 10E-5 lb/vehicle mile traveled	Engineering estimate, based on AP-42 VOC emission factor	13
Gasoline use		Automobile emissions		1,4-Xylene	106423	1.28 x 10E-6 lb/vehicle mile traveled	Engineering estimate, based on AP-42 VOC emission factor	13
Gasoline use		Automobile emissions		1,4-Xylene	106423	7.06 x 10E-5 lb/vehicle mile traveled	Engineering estimate, based on AP-42 VOC emission factor	13
Gasoline use		Automobile emissions		1,2-Xylene	95476	1.28 x 10E-6 lb/vehicle mile traveled	Engineering estimate, based on AP-42 VOC emission factor	13
Gasoline use		Automobile emissions		1,2-Xylene	95476	7.76 x 10E-5 lb/vehicle mile traveled	Engineering estimate, based on AP-42 VOC emission factor	13
Gasoline use		Automobile emissions	208888	Xylenes (mixed isomers)	1330207	0.0838 lb/10E3 gal gasoline consumed	Engineering judgement	13
Gasoline use		Automobile emissions	208888	Xylenes (mixed isomers)	1330207	3.93 lb/10E3 gal gasoline consumed	Engineering judgement	13
Gasoline use		Automobile emissions		Xylenes (mixed isomers)	1330207	5.46 x 10E-6 lb/vehicle mile traveled	Engineering estimate, based on AP-42 VOC emission factor	13
Gasoline use		Automobile emissions		Xylenes (mixed isomers)	1330207	2.39 x 10E-4 lb/vehicle mile traveled	Engineering estimate, based on AP-42 VOC emission factor	13
General laboratory use		General handling, experimental, or other losses		Mercury	7439976	80 lb/ton of Hg used	Control status unspecified, based on engineering judgement	113
Glass fiber manufacture	3229	Textile glass furnace	305012	Fluoride	16984488	2 lb/ton raw material processed	Uncontrolled, based on limited test data	97
Glass fiber manufacture	3296	Wool glass furnace - electric	30501203	Fluoride	16984488	0.002 lb/ton raw material processed	Uncontrolled, based on limited test data	97
Glass fiber manufacture	3296	Wool glass furnace - gas	305013	Fluoride	16984488	0.12 lb/ton raw material processed	Uncontrolled, based on limited test data	97

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Glass manufacturing	32	Entire process	305014	Arsenic	7440382	0.36 lb inorganic As/ton glass pulled	Rough estimate, control devices - only compliance with relevant State PM regs. assumed	32
Glass manufacturing	32	Entire process	305014	Arsenic	7440382	0.50 lb total elem. As/ton glass pulled	For all single, regener. type furnaces, no control, regardless of type of glass prod.	28
Glass manufacturing	322	Glass melting furnace	30501404	Fluoride	16984488	20 lbs/ton of glass produced	Uncontrolled emissions, pressed and blown glass furnace	191
Glass manufacturing	3221	Glass melting furnace	30501403	Selenium	7782492	0.004 lbs/ton of glass produced	Uncontrolled emissions, container glass furnace	191, 23
Glass manufacturing	329	Glass melting furnace	30501201	Fluoride	16984488	0.12 lbs/ton of glass produced	Uncontrolled emissions, wool fiberglass furnace	191
Glycerin production - chlorination process	2869	Lights stripper vent - allyl alcohol stge	30117619	Acetone	67641	5.9 lb/ton glycerin produced	Uncontrolled, assumed 25% VOC is acetone, test data and calculations	150
Glycerin production - chlorination process	2869	Catalyst prep vent - allyl alcohol stge	30117610	2-Butyl alcohol	78922	148.9 lb/ton glycerin produced	Uncontrolled, assumed 33% VOC is butyl alcohol, test data and calculations	150
Glycol ether production - methanol process	2869	Vacuum system vent	30129302	2-(2-(2-Ethoxyethoxy)etho xy) ethanol	112905	0.03 lb/ton glycol ether produced	Uncontrolled, approximation based on data from one plant	142
Glycol ether production - methanol process	2869	Vacuum system vent	30129302	Methanol	67561	0.126 lb/ton glycol ether produced	Uncontrolled, approximation based on data from one plant	142
Glycol ether production - methanol process	2869	Vacuum system vent	30129302	2-Methoxyethanol	109864	0.188 lb/ton glycol ether produced	Uncontrolled, approximation based on data from one plant	142
Glycol ether production - methanol process	2869	Vacuum system vent	30129302	2-(2-Methoxyethoxy) ethanol	111773	0.126 lb/ton glycol ether produced	Uncontrolled, approximation based on data from one plant	142
Hazardous waste incineration	49	Bottom ash	50300501	Polychlorinated dibenzofurans, total		0.00571 lb/ton	Use of afterburner, fuel = transformer oil w/ PCBs + insul. from alum. & copper wirings, 1 sample	119
Hazardous waste incineration	49	Rotary kiln - flue gas	50300501	Polychlorinated dibenzofurans, total		Not detectable - 29.3 ng/m3	One location	119
Hazardous waste incineration	49	Rotary kiln - flue gas	50300501	Polychlorinated dibenzofurans, total		4.18 x 10E-11 lb/train	Penta homologue only	119
Hazardous waste incineration	49	Bottom ash	50300501	Polychlorinated dibenzo-p-dioxins, total		0.00100 lb/ton	Use of afterburner, fuel = transformer oil w/ PCBs + insul. from alum. & copper wirings, 1 sample	119
Hazardous waste incineration	49	Rotary kiln - flue gas	50300501	Polychlorinated dibenzo-p-dioxins, total		Not detectable - 49.9 ng/m3	Two locations	119
Hazardous waste incineration	49	Rotary kiln - flue gas	50300501	Polychlorinated dibenzo-p-dioxins, total		1.48 x 10E-10 lb/train	Penta, hepta, octa CDD only	119

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Hazardous waste incineration	49	Rotary kiln - particulate	50300501	Polychlorinated dibenzo-p-dioxins, total		0.01942 - 1.695 lb/ton	One location, n = 3, both solid & liquid waste, no supplementary fuel used	119
Hazardous waste incineration	49	Rotary kiln - particulate	50300501	Polychlorinated dibenzo-p-dioxins, total		2.6 x 10E-5 - 0.002128 lb/ton	1 location, n=4, both solid & liquid waste, use of suppl. fuel, hepta, hexa, octa homologues only	119
Hazardous waste incineration	49	Stack - fly ash	50300501	Polychlorinated dibenzo-p-dioxins, total		3.5 x 10E-5 - 0.227 lb/ton	3 sites tested, homologue data given in refer., lesser data may be avail. from indiv. references	116
Hazardous waste incineration	49	Tar burner - particulate	50300501	Polychlorinated dibenzo-p-dioxins, total		5.12 x 10E-4 - 1.144 x 10E-3 lb/ton	One location, n = 4, Use natural gas as suppl. fuel, hexa, hepta, octa homologues only	119
Hazardous waste incineration	49	Rotary kiln - particulate	50300501	2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	Not detectable - 0.011 lb/ton	One location, n = 5, both solid & liquid waste, no supplementary fuel used	119
Hazardous waste incineration	49	Rotary kiln - particulate	50300501	2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	ND	One location, n = 5, both solid & liquid waste, use of supplementary fuel	119
Hazardous waste incineration	49	Stack - fly ash	50300501	2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	Not detectable - 2.2 x 10E-4 lb/ton	3 sites tested, homologue data given in refer., lesser data may be avail. from indiv. references	116
Hazardous waste incineration	49	Tar burner - particulate	50300501	2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	Not detectable	One location, n = 4, Uses natural gas as suppl. fuel, detection limit = 2.6 x 10E-5 - x 10E-6 lb/ton	119
Hazardous waste incineration	49	Stack - fly ash	50300501	Tetrachlorodibenzo-p-dioxins, total		Not detectable - 0.024 lb/ton	3 sites tested, homologue data given in refer., lesser data may be avail. from indiv. references	116
Herbicide application - Bacthal	072	Application process	302	Hexachlorobenzene	118741	2 lbs/ton herbicide used	Assumes content = 0.1%, all volatilized - worst case situations	49
Herbicide production	2879	Fugitive emissions		Phosgene	75445	0.012 lb/ton phosgene produced	Hypothetical plant, upper end of range, lower value is 3 x 10-4 lb/ton	121
Herbicide production	2879	Process waste		Phosgene	75445	0.0006 lb/ton phosgene produced		121
Herbicide production	2879	Process vents		Phosgene	75445	0.0132 lb/ton phosgene produced	Hypothe. plant, value is for herbic. alone, add to phos. value to get value for phos.-herbic. plant	121
Hexachlorocyclopentadiene production	2869	Chlorination reactor vent	301	1,2,3,4,5,5-Hexachloro-1,3-cyclopentadiene	77474	10.4 lb/ton produced	Based on engineering judgement	13
Hexachlorocyclopentadiene production	2869	Fugitive emissions/equipment leaks	301	1,2,3,4,5,5-Hexachloro-1,3-cyclopentadiene	77474	4 lb/ton produced	Based on engineering judgement	13
Hexachlorocyclopentadiene production	2869	Storage	407	1,2,3,4,5,5-Hexachloro-1,3-cyclopentadiene	77474	1.4 lb/ton produced	Based on engineering judgement	13
Hexamethylene-tetramine production	2869	Formaldehyde storage	407	Formaldehyde	50000	0.1 lb/ton of 37% formaldehyde used	No information was available on the basis of these estimates or the types of control involved	106

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Hexamethylene-tetramine production	2869	Process - general	30103429	Formaldehyde	50000	<0.78 lb/ton of 37% formaldehyde used	No information was available on the basis of these estimates or the types of control involved	106
Hospital sterilization	8062	Fugitive emissions	319020	Ethylene oxide	75218	400 lb/ton ethylene oxide used	Uncontrolled, based on source tests	64
Hospital sterilization	8062	Fugitive emissions	319020	Ethylene oxide	75218	520 lb/ton/hospital bed	Uncontrolled, based on source tests, inappropriate to use this factor for individual hospitals	64
Hospital sterilization	8062	Fugitive emissions	319020	Ethylene oxide	75218	300 lb/ton ethylene oxide purchased	Uncontrolled, based on source tests	64
Hospital sterilization	8062	Process vents	319020	Ethylene oxide	75218	900 lb/ton ethylene oxide used	Uncontrolled, based on source tests	64
Hospital sterilization	8062	Process vents	319020	Ethylene oxide	75218	660 lb/ton/hospital bed	Uncontrolled, based on source tests, inappropriate to use this factor for individual hospitals	64
Hospital sterilization	8062	Process vents	319020	Ethylene oxide	75218	380 lb/ton ethylene oxide purchased	Uncontrolled, based on source tests	64
Hospital sterilization	8062	Wastewater emissions	319020	Ethylene oxide	75218	1100 lb/ton ethylene oxide used	Uncontrolled, based on source tests	64
Hospital sterilization	8062	Wastewater emissions	319020	Ethylene oxide	75218	1440 lb/ton/hospital bed	Uncontrolled, based on source tests, inappropriate to use this factor for individual hospitals	64
Hospital sterilization	8062	Wastewater emissions	319020	Ethylene oxide	75218	840 lb/ton ethylene oxide purchased	Uncontrolled, based on source tests	64
Hospital sterilizer, table-top	8062	Fugitive emissions	319020	Ethylene oxide	75218	400 lb/ton ethylene oxide used	Uncontrolled, based on engineering judgement	64
Hospital sterilizer, table-top	8062	Fugitive emissions	319020	Ethylene oxide	75218	300 lb/ton ethylene oxide purchased	Uncontrolled, based on engineering judgement	64
Hospital sterilizer, table-top	8062	Process - general	319020	Ethylene oxide	75218	1400 lb/ton ethylene oxide used	Uncontrolled, based on engineering judgement	64
Hospital sterilizer, table-top	8062	Process - general	319020	Ethylene oxide	75218	1240 lb/ton ethylene oxide purchased	Uncontrolled, based on engineering judgement	64
Hospital waste incineration	806	Incinerator	50200505	Arsenic	7440382	1.0 x 10E-4 lb/ton feed	Uncontrolled, test data	167
Hospital waste incineration	806		50200505	Benzene	71432	0.1-0.4 lb/hr benzene	Test report by California Air Resources Board, engineering judgement	132
Hospital waste incineration	806	Incinerator	50200505	Cadmium	7440439	35.2 x 10E-4 lb/ton feed	Uncontrolled, test data	167

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Hospital waste incineration	806	Incinerator	50200505	Carbon tetrachloride	56235	9.9 x 10E-5 lb/ton feed	Uncontrolled, test data	167
Hospital waste incineration	806	Incinerator	50200505	Chromium	7440473	7.22 x 10E-4 lb/ton	Uncontrolled, test data, total chromium	167
Hospital waste incineration	806	Incinerator	319020	Ethane	74840	<0.003 lb/ton feed	Uncontrolled, test data	167
Hospital waste incineration	806	Incinerator	319020	Ethylene	74851	<0.02 lb/ton feed	Uncontrolled, test data	167
Hospital waste incineration	806	Incinerator	50200505	Heptachlorodibenzofurans, total		3.07 x 10E-6 lb/ton feed	Uncontrolled, test data	167
Hospital waste incineration	806	Incinerator	50200505	Heptachlorodibenzo-p-dioxins, total		1.45 x 10E-6 lb/ton feed	Uncontrolled, test data	167
Hospital waste incineration	806	Incinerator	50200505	Hexachlorodibenzofurans, total		2.97 x 10E-6 lb/ton feed	Uncontrolled, test data	167
Hospital waste incineration	806	Incinerator	50200505	Hexachlorodibenzo-p-dioxins, total		0.75 x 10E-6 lb/ton feed	Uncontrolled, test data	167
Hospital waste incineration	806	Two-chambered incinerator	50200505	Hydrogen chloride	7647010	20-32 lb/ton waste	Uncontrolled, range due to variation in waste, test of one facility	103
Hospital waste incineration	806	Incinerator	319020	Hydrogen chloride	7647010	34.7 lb/ton feed	Uncontrolled, average emission factor based on 20 facilities	167
Hospital waste incineration	806	Incinerator	319020	Hydrogen chloride	7647010	14.8 lb/ton feed	Controlled with fabric filter, based on 1 facility	167
Hospital waste incineration	806	Incinerator	319020	Hydrogen chloride	7647010	3.7 lb/ton feed	Controlled with wet scrubber, average emission factor based on 3 facilities	167
Hospital waste incineration	806	Incinerator	319020	Iron	19438310	<0.0103 lb/ton feed	Uncontrolled, average emission factor based on 3 facilities	167
Hospital waste incineration	806	Incinerator	319020	Lead	7439921	<0.0371 lb/ton feed	Uncontrolled, average emission factor based on 3 facilities	167
Hospital waste incineration	806	Incinerator	50200505	Manganese	7439965	9.4 x 10E-4 lb/ton	Uncontrolled, test data	167
Hospital waste incineration	806	Incinerator	50200505	Nickel	7440020	2.83 x 10E-4 lb/ton	Uncontrolled, test data	167
Hospital waste incineration	806	Incinerator	50200505	Octachlorodibenzofurans, total		2.21 x 10E-6 lb/ton feed	Uncontrolled, test data	167

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Hospital waste incineration	806	Incinerator	50200505	Octachlorodibenzo-p-dioxins, total		2.28 x 10E-6 lb/ton feed	Uncontrolled, test data	167
Hospital waste incineration	806	Incinerator	50200505	Pentachlorodibenzofurans, total		2.20 x 10E-6 lb/ton feed	Uncontrolled, test data	167
Hospital waste incineration	806	Incinerator	50200505	Pentachlorodibenzo-p-dioxins, total		0.41 x 10E-6 lb/ton feed	Uncontrolled, test data	167
Hospital waste incineration	806	Flue gas	50200505	Polychlorinated dibenzofurans, total		25 - 197 ng/m3	Based on testing at four locations in the U.S. and Canada	119
Hospital waste incineration	806	Flue gas	50200505	Polychlorinated dibenzofurans, total		25 ng/m3	Flue gas sample, n = 3	119
Hospital waste incineration	806	Incinerator	50200505	Polychlorinated dibenzofurans, total		11.71 x 10E-6 lb/ton feed	Uncontrolled, test data	167
Hospital waste incineration	806	Flue gas	50200505	Polychlorinated dibenzo-p-dioxins, total		15 - 84 ng/m3	Based on testing at four locations in the U.S. and Canada	119
Hospital waste incineration	806	Flue gas	50200505	Polychlorinated dibenzo-p-dioxins, total		15 ng/m3	Flue gas sample, n = 3	119
Hospital waste incineration	806	Incinerator	50200505	Polychlorinated dibenzo-p-dioxins, total		5.30 x 10E-6 lb/ton feed	Uncontrolled, test data	167
Hospital waste incineration	806	Incinerator	315020	Propane	74986	<0.024 lb/ton feed	Uncontrolled, test data	167
Hospital waste incineration	806	Incinerator	315020	Propylene	115071	<0.022 lb/ton feed	Uncontrolled, test data	167
Hospital waste incineration	806	Incinerator	50200505	Tetrachlorodibenzofurans, total		1.26 [illegible]-6 lb/ton feed	Uncontrolled, test data	167
Hospital waste incineration	806	Incinerator	50200505	Tetrachlorodibenzo-p-dioxins, total		0.33 x 10E-6 lb/ton feed	Uncontrolled, test data	167
Hospital waste incineration	806	Incinerator	50200505	Tetrachloroethylene	127184	2.49 x 10E-4 lb/ton feed	Uncontrolled, test data	167
Hospital waste incineration	806	Incinerator	50200505	Trichloroethylene	79016	2.39 x 10E-5 lb/ton feed	Uncontrolled, test data	167
Hospital waste incineration	806	Incinerator	50200505	1,1,2-Trichloro-1,2,2-trifluoroethane	76131	8.25 x 10E-4 lb/ton feed	Uncontrolled, test data	167
Hydrochloric acid manufacture - by-product process	2819	Entire process	30101101	Hydrogen chloride	7647010	0-8.5 lbs/ton acid produced		34

FOR APPRAISE

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Hydrochloric acid manufacture - by-product process	2819	By-product HCl	301011	Hydrogen chloride	7647010	3.0 lbs/ton	Based on rate of production, w/out final scrubber	181, 97
Hydrochloric acid manufacture - by-product process	2819	By-product HCl	301011	Hydrogen chloride	7647010	0.2 lbs/ton	Based on rate of production, controlled with scrubber	181
Hydrochloric acid manufacture - cannhole process	2819	Entire process		Hydrogen chloride	7647010	1.3 to 3.8 lb/ton acid produced		34
Hydrochloric acid manufacture - synthesis process	2819	Entire process		Hydrogen chloride	7647010	0 to <0.039 lb/ton acid produced		34
Hydrofluoric acid manufacture	2819	Tail gas	30101206	Hydrogen fluoride	7664393	25 lb/ton acid	Uncontrolled, average of data for three plants	97, 181
Hydrofluoric acid manufacture	2819	Tail gas	30101206	Hydrogen fluoride	7664393	0.2 lb/ton acid	Caustic scrubber, average of data for three plants	97, 181
Hydrofluoric acid manufacture	2819	Tail gas	30101206	Silicon tetrafluoride	7783611	30 lb/ton acid	Uncontrolled, average of data for three plants	97
Hydrofluoric acid manufacture	2819	Tail gas	30101206	Silicon tetrafluoride	7783611	0.3 lb/ton acid	Caustic scrubber, average of data for three plants	97
HyalonR production	2822	All sources		Carbon tetrachloride	56235	400,000 lb/yr	One plant only in U.S.	134
Industrial carbon regeneration	49	Stack		Heptachlorodibenzofurans, total		0.61 ng/dscm @ 3% 02	Tier 4 stack testing	119
Industrial carbon regeneration	49	Stack		Heptachlorodibenzo-p-dioxins, total		0.90 ng/dscm @ 3% 02	Tier 4 stack testing	119
Industrial carbon regeneration	49	Stack		Hexachlorodibenzofurans, total		0.59 ng/dscm @ 3% 02	Tier 4 stack testing	119
Industrial carbon regeneration	49	Stack		Hexachlorodibenzo-p-dioxins, total		0.98 ng/dscm @ 3% 02	Tier 4 stack testing	119
Industrial carbon regeneration	49	Stack		Octachlorodibenzofurans, total		0.54 ng/dscm @ 3% 02	Tier 4 stack testing	119
Industrial carbon regeneration	49	Stack		Octachlorodibenzo-p-dioxins, total		0.81 ng/dscm @ 3% 02	Tier 4 stack testing	119
Industrial carbon regeneration	49	Stack		Pentachlorodibenzofurans, total		0.37 ng/dscm @ 3% 02	Tier 4 stack testing	119

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Industrial carbon regeneration	49	Stack		Pentachlorodibenzo-p-dioxins, total		0.44 ng/dscm @ 3% O2	Tier 4 stack testing	115
Industrial carbon regeneration	49	Stack		2,3,7,8-Tetrachlorodibenzofuran		Not detectable	Tier 4 stack testing, detection limit <0.1 ug/dscm @ 3% O2	115
Industrial carbon regeneration	49	Stack		Tetrachlorodibenzofurans, total		1.2 ng/dscm @ 3% O2	Tier 4 stack testing, does not include 2,3,7,8-isomer	115
Industrial carbon regeneration	49	Stack		2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	Not detectable	Tier 4 stack testing, detection limit <0.1 ng/dscm @ 3% O2	115
Industrial carbon regeneration	49	Stack		Tetrachlorodibenzo-p-dioxins, total		0.57 ng/dscm @ 3% O2	Tier 4 stack testing, does not include 2,3,7,8-isomer	115
Industrial wastewater treatment	28	Weir	301	1,3-Butadiene	106990	0.29 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Oil-water separator	301	1,3-Butadiene	106990	1.0 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Treatment tank	301	1,3-Butadiene	106990	0.01 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Treatment tank	301	1,3-Butadiene	106990	0.22 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Aerated biobasin	301	1,3-Butadiene	106990	0.29 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Clarifier	301	1,3-Butadiene	106990	0.028 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Aerated equalization basin	301	1,3-Butadiene	106990	1.0 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Non-aerated equalization basin	301	1,3-Butadiene	106990	0.43 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Open trench	301	1,3-Butadiene	106990	0.059 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Sump	301	1,3-Butadiene	106990	9.6x 10E-03 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Lift station	301	1,3-Butadiene	106990	0.34 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Junction box	301	1,3-Butadiene	106990	0.12 x mass of pollutant in waste strea	Uncontrolled emissions	205

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Industrial wastewater treatment	28	Manhole	301	1,3-Butadiene	106990	0.18 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Drain	301	1,3-Butadiene	106990	0.57 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Weir	301	1-Butanol	71363	0.26 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Oil-water separator	301	1-Butanol	71363	4.9 x 10E-4 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Treatment tank	301	1-Butanol	71363	2.9 x 10E-3 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Non-aerated biobasin	301	1-Butanol	71363	0.30 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Aerated biobasin	301	1-Butanol	71363	0.041 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Clarifier	301	1-Butanol	71363	7.8 x 10E-3 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Aerated equalization basin	301	1-Butanol	71363	0.61 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Non-aerated equalization basin	301	1-Butanol	71363	0.18 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Open trench	301	1-Butanol	71363	4.1 x 10E-4 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Sump	301	1-Butanol	71363	2.1 x 10E-3 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Lift station	301	1-Butanol	71363	3.6 x 10E-3 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Junction box	301	1-Butanol	71363	1.9 x 10E-3 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Manhole	301	1-Butanol	71363	1.1 x 10E-5 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Drain	301	1-Butanol	71363	8.7 x 10E-5 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Weir	301	Naphthalene	91203	0.23 x mass of pollutant in waste stream	Uncontrolled emissions	205

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Industrial wastewater treatment	28	Oil-water separator	301	Naphthalene	91203	0.09 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Treatment tank	301	Naphthalene	91203	8.6 x 10E-03 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Non-aerated biobasin	301	Naphthalene	91203	0.12 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Aerated biobasin	301	Naphthalene	91203	0.17 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Clarifier	301	Naphthalene	91203	0.024 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Aerated equalization basin	301	Naphthalene	91203	0.99 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Non-aerated equalization basin	301	Naphthalene	91203	0.38 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Open trench	301	Naphthalene	91203	0.025 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Sump	301	Naphthalene	91203	4.7 x 10E-03 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Lift station	301	Naphthalene	91203	0.18 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Junction box	301	Naphthalene	91203	0.048 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Manhole	301	Naphthalene	91203	0.0018 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Drain	301	Naphthalene	91203	0.011 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Weir	301	Phenol	108952	0.36 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Oil-water separator	301	Phenol	108952	3.7 x 10E-05 x mass of pollt in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Treatment tank	301	Phenol	108952	1.1 x 10E-04 x mass of pollt in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Non-aerated biobasin	301	Phenol	108952	3.9 x 10E-04 x mass of pollt in waste stream	Uncontrolled emissions	205

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Industrial wastewater treatment	28	Aerated biobasin	301	Phenol	108952	1.9 x 10E-05 x mass of pollt in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Clarifier	301	Phenol	108952	5.6 x 10E-04 x mass of pollt in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Aerated equalization basin	301	Phenol	108952	0.077 x mass of pollt in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Non-aerated equalization basin	301	Phenol	108952	0.016 x mass of pollt in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Open trench	301	Phenol	108952	2.1 x 10E-05 x mass of pollt in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Sump	301	Phenol	108952	1.9 x 10E-04 x mass of pollt in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Lift station	301	Phenol	108952	2.0 x 10E-04 x mass of pollt in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Junction box	301	Phenol	108952	1.1 x 10E-04 x mass of pollt in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Manhole	301	Phenol	108952	5.7 x 10E-07 x mass of pollt in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Drain	301	Phenol	108952	4.4 x 10E-06 x mass of pollt in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Weir	301	Toluene	108883	0.25 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Oil-water separator	301	Toluene	108883	0.47 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Treatment tank	301	Toluene	108883	9.2 x 10E-3 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Non-aerated biobasin	301	Toluene	108883	0.040 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Aerated biobasin	301	Toluene	108883	0.12 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Clarifier	301	Toluene	108883	0.029 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Aerated equalization basin	301	Toluene	108883	0.99 x mass of pollutant in waste stream	Uncontrolled emissions	205

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Industrial wastewater treatment	28	Non-aerated equalization basin	301	Toluene	108883	0.40 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Open trench	301	Toluene	108883	0.048 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Sump	301	Toluene	108883	5.0 x 10E-3 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Lift station	301	Toluene	108883	0.29 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Junction box	301	Toluene	108883	0.098 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Manhole	301	Toluene	108883	0.0082 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Drain	301	Toluene	108883	0.041 x mass of pollutant in waste stream	Uncontrolled emissions	205
Industrial wastewater treatment	28	Treatment tank	301	Volatile organic compound		((ln(H)x0.0006558)+0.0137 4) x mass of pol. in wastestream	Uncontrolled emissions, H=Henry's Law Constant in atm-m3/mol of toxic volatile organic	205
Industrial wastewater treatment	28	Clarifier	301	Volatile organic compound		((ln(H)x0.002381)+0.3789) x mass of pol. in wastestream	Uncontrolled emissions, H=Henry's Law Constant in atm-m3/mol of toxic volatile organic	205
Industrial wastewater treatment	28	Non-aerated equalization basin	301	Volatile organic compound		((ln(H)x0.0331)+0.5752) x mass of pol. in wastestream	Uncontrolled emissions, H=Henry's Law Constant in atm-m3/mol of toxic volatile organic	205
Industrial wastewater treatment	28	Aerated equalization basin	301	Volatile organic compound		((ln(H)x0.4927)+1.3491) x mass of pol. in wastestream	Uncontrolled emissions, H=Henry's Law Constant in atm-m3/mol of toxic volatile organic	205
Industrial wastewater treatment	28	Oil-water separator	301	Volatile organic compound		(H x 0.8797)+21.4034 x mass of pol. in wastestream	Uncontrolled emissions, H=Henry's Law Constant in atm-m3/mol of toxic volatile organic	205
Industrial wastewater treatment	28	Lift station	301	Volatile organic compound		((H x 0.6421)+6.0118) x mass of pol. in wastestream	Uncontrolled emissions, H=Henry's Law Constant in atm-m3/mol of toxic volatile organic	205
Industrial wastewater treatment	28	Trench	301	Volatile organic compound		((ln(H)x 0.095006)+0.068993) x mass of pol. in wastestream	Uncontrolled emissions, H=Henry's Law Constant in atm-m3/mol of toxic volatile organic	205
Industrial wastewater treatment	28	Sump	301	Volatile organic compound		((ln(H)x 0.0004389)+0.6073844) x mass of pol. in wastestream	Uncontrolled emissions, H=Henry's Law Constant in atm-m3/mol of toxic volatile organic	205

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Industrial wastewater treatment	28	Junction box	301	Volatile organic compound		[(Hx 0.892)+1.658] x mss of pol. in wastestream	Uncontrolled emissions, H=Henry's Law Constant in atm-m3/mol of toxic volatile organic	209
Industrial wastewater treatment	28	Manhole	301	Volatile organic compound		[(Hx 1.04)+0.0003814] x mss of pol. in wastestream	Uncontrolled emissions, H=Henry's Law Constant in atm-m3/mol of toxic volatile organic	209
Industrial wastewater treatment	28	Drain	301	Volatile organic compound		[(Hx3.973)+0.0100] x mss pol. in wastestream	Uncontrolled emissions, H=Henry's Law Constant in atm-m3/mol of toxic volatile organic	209
Instrument manufacture	38	Breakage, spillage and other sources	399999	Mercury	7439976	18 lb/ton of contained Hg	Uncontrolled, based on survey responses (1960s)	113
Internal combustion engines - mobile		Heavy duty diesel vehicle exhaust emissions		Benzene	71432	1.10% benzene of exhaust HCs	Engineering Judgement	132
Internal combustion engines - mobile		Heavy duty gasoline vehicle exhaust emissions		Benzene	71432	3.48% benzene of exhaust HCs	Engineering Judgement	132
Internal combustion engines - mobile		Light duty diesel truck exhaust emissions		Benzene	71432	2.4% benzene of exhaust HCs	Engineering Judgement	132
Internal combustion engines - mobile		Light duty diesel vehicle exhaust emissions		Benzene	71432	2.4% benzene of exhaust HCs	Engineering Judgement	132
Internal combustion engines - mobile		Light duty gasoline truck exhaust emissions		Benzene	71432	3.24% benzene of exhaust HCs	Engineering Judgement	132
Internal combustion engines - mobile		Light duty gasoline truck exhaust emissions		Benzene	71432	1.1% benzene of evaporative HCs	Engineering Judgement	132
Internal combustion engines - mobile		Light duty gasoline vehicle, exhaust emissions		Benzene	71432	0.35-1.93% benzene of evaporative HCs	0.35-0.46% fuel-injected vehicles, 1.11-1.93% carbureted light duty gas vehicles, eng. judgement	132
Internal combustion engines - mobile		Light duty gasoline vehicles, 3-way catalyst, exhaust emissions		Benzene	71432	5.12% benzene of exhaust HCs	Engineering Judgement	132
Internal combustion engines - mobile		Light duty gasoline vehicles, 3-way catalyst, exhaust emissions		Benzene	71432	2.78% benzene of exhaust HCs	Engineering Judgement	132
Internal combustion engines - mobile		Light duty gasoline vehicles, noncatalyst/oxidation catalyst, exhaust		Benzene	71432	3.95% benzene of exhaust HCs	Engineering Judgement	132
Internal combustion engines - mobile		4 cylinder car engine		Benzo(a)pyrene	50328	1.54 x 10E-10 lb/mile	4 cylinder catalyst, 1981 car	114

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Internal combustion engines - mobile		8 cylinder car engine		Benzo(a)pyrene	50328	9.19 x 10E-9 lb/mile	Catalyst removed, 1980 car	114
Internal combustion engines - mobile		8 cylinder engine		Benzo(a)pyrene	50328	4 x 10E-9 lb/mile	Precatalyst, 1974 car	114
Internal combustion engines - mobile		Diesel car engine		Benzo(a)pyrene	50328	0.0078 lb/ton particulate	Range 0.0026 - 0.0146 lb/ton	114
Internal combustion engines - mobile		Turbocharged diesel truck engine		Benzo(a)pyrene	50328	9 x 10E-8 lb/ton fuel	1260 rpm, no load	114
Internal combustion engines - mobile		Turbocharged diesel truck engine		Benzo(a)pyrene	50328	1.6 x 10E-8 lb/ton fuel	1260 rpm, half load	114
Internal combustion engines - mobile		Turbocharged diesel truck engine		Benzo(a)pyrene	50328	3.2 x 10E-8 lb/ton fuel	1800 rpm, full load	114
Internal combustion engines - mobile		V-8 gasoline engine		Benzo(a)pyrene	50328	5.51 x 10E-8 lb/mile	Uncontrolled, mounted on dynamometer, est. 8000-12,000 mileage, incl. BaP fr. condenser collect. tar	114
Internal combustion engines - mobile		V-8 gasoline engine		Benzo(a)pyrene	50328	3.52 x 10E-8 lb/mile	Uncontrolled, mounted on dynamometer, estimated 19,000-28,000 mileage	114
Internal combustion engines - mobile		V-8 gasoline engine		Benzo(a)pyrene	50328	5.29 x 10E-8 lb/mile	Uncontrolled, mounted on dynamometer, estimated 25,500-29,000 mileage	114
Internal combustion engines - mobile		Motor vehicles	2	1,2-Dichloroethane	107062	1.148 x 10E-5 lb/ton leaded gas burned	Calculated based on engineering judgement	91
Internal combustion engines - mobile		Automobiles (catalyst)	2	Formaldehyde	50000	7.1 x 10E-6 - 1.136 x 10E-4 lb/mile	Based on emiss. test data, use lower value for low mileage cars/higher value for high mileage cars	106
Internal combustion engines - mobile		Automobiles (catalyst)	2	Formaldehyde	50000	1.102 x 10E-4 - 0.00183 lb/gal	Based on emiss. test data, use lower value for low mileage cars & higher value for high mileage cars	106
Internal combustion engines - mobile		Automobiles (diesel)	2	Formaldehyde	50000	4.615 x 10E-5 lb/mile	Based on emiss. test data, use lower value for low mileage cars & higher value for high mileage cars	106
Internal combustion engines - mobile		Automobiles (diesel)	2	Formaldehyde	50000	7.28 x 10E-4 lb/gal	Based on emiss. test data, use lower value for low mileage cars & higher value for high mileage cars	106
Internal combustion engines - mobile		Automobiles (noncatalyst)	2	Formaldehyde	50000	1.136 x 10E-4 lb/mile	Based on emiss. test data, use lower value for low mileage cars & higher value for high mileage cars	106
Internal combustion engines - mobile		Automobiles (noncatalyst)	2	Formaldehyde	50000	0.00183 lb/gal	Based on emiss. test data, use lower value for low mileage cars & higher value for high mileage cars	106
Internal combustion engines - mobile		Heavy-duty diesel vehicles	2	Formaldehyde	50000	1.95 x 10E-4 lb/mile	Based on emiss. test data, use lower value for low mileage cars & higher value for high mileage cars	106

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Internal combustion engines - mobile		Heavy-duty diesel vehicles	2	Formaldehyde	50000	0.00121 lb/gal	Based on emiss. test data, use lower value for low mileage cars & higher value for high mileage cars	106
Internal combustion engines - mobile		Heavy-duty gasoline vehicles	2	Formaldehyde	50000	2.7 x 10E-4 lb/mile	Based on emiss. test data, use lower value for low mileage cars & higher value for high mileage cars	106
Internal combustion engines - mobile		Heavy-duty gasoline vehicles	2	Formaldehyde	50000	0.0014i lb/gal	Based on emiss. test data, use lower value for low mileage cars & higher value for high mileage cars	106
Internal combustion engines - mobile		Motorcycles, 2-cycle	2	Formaldehyde	50000	1.46 x 10E-4 lb/mile	Derived from total aldehyde emissions data	106
Internal combustion engines - mobile		Motorcycles, 2-cycle	2	Formaldehyde	50000	0.007279 lb/gal	Derived from total aldehyde emissions data	106
Internal combustion engines - mobile		Motorcycles, 4-cycle	2	Formaldehyde	50000	6.04 x 10E-5 lb/mile	Derived from total aldehyde emissions data	106
Internal combustion engines - mobile		Motorcycles, 4-cycle	2	Formaldehyde	50000	0.00309 lb/gal	Derived from total aldehyde emissions data	106
Internal combustion engines - mobile		Snowmobiles	2	Formaldehyde	50000	0.0013 lb/gal	Derived from total aldehyde emissions data	106
Internal combustion engines - mobile		Turbo prop or piston aircraft	2	Formaldehyde	50000	0.00283 lb/gal	Derived from total aldehyde emissions data	106
Internal combustion engines - mobile		Automobile emissions		Polychlorinated dibenzo-p-dioxins, total		0 x 10E-9 lb/ton	Sample was a scraping from muffler of car using leaded gas, tetra, hexa, hepta, octa homologues only	119
Internal combustion engines - mobile		Automobile emissions		Polychlorinated dibenzo-p-dioxins, total		2 x 10E-8 - 1.6 x 10E-7 lb/ton	2 samples scraped from muffler, used unlead gas w/ catalytic converter, tetra/hexa/hepta/octa homol.	119
Internal combustion engines - mobile		Diesel truck emissions		Polychlorinated dibenzo-p-dioxins, total		7.8 x 10E-7 - 8 x 10E-7 lb/ton	Samples of scrapings from 2 mufflers, diesel fuel used	119
Internal combustion engines - mobile		Automobile emissions		2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	Not detectable	Sample was a scraping from muffler of car using leaded gas, detection limit = 4 x 10E-9 lb/ton	119
Internal combustion engines - mobile		Automobile emissions		2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	5.96 x 10E-6 lb/ton	Samples of the filter extract (n = 3) from a car using leaded gas	119
Internal combustion engines - mobile		Automobile emissions		2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	Not detectable	Sample - scraping from muffler, car used unlead gas w/ catalytic converter, detec. limit 6 x 10E-9	119
Internal combustion engines - mobile		Automobile emissions		2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	2.0 x 10E-6 lb/ton	Sample of filter extract, car used unlead gas + catalytic converter	119
Internal combustion engines - mobile		Diesel car emissions		2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	Not detectable	Samples of two filter extracts, diesel fuel used	119

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Internal combustion engines - mobile		Diesel truck emissions		2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	Not detectable - 6 x 10E-9 lb/ton	Samples of scrapings from 2 mufflers, diesel fuel used	119
Internal combustion engines - mobile		Automobile emissions		Tetrachlorodibenzo-p-dioxins, total		9.84 x 10E-8 lb/ton	Samples of the filter extract (n = 3) from a car using leaded gas	119
Internal combustion engines - mobile		Automobile emissions		Tetrachlorodibenzo-p-dioxins, total		7.48 x 10E-8 lb/ton	Sample of filter extract, car used unlead gas + catalytic converter	119
Internal combustion engines - mobile		Diesel car emissions		Tetrachlorodibenzo-p-dioxins, total		Not detectable	Samples of two filter extracts, diesel fuel used	119
Internal combustion engines - mobile		Automobile emissions		Toluene	108883	0.44 x 10E-4 lb/vehicle mile traveled	Engineering calculations	13
Internal combustion engines - mobile	01	Diesel powered construction equipment, wheeled tractor	2	Formaldehyde	50000	0.007275 lb/gal	Derived from total aldehyde emissions data	106
Internal combustion engines - mobile	01	Diesel powered farm equipment, miscellaneous	2	Formaldehyde	50000	0.00617 lb/gal	Derived from total aldehyde emissions data	106
Internal combustion engines - mobile	01	Gasoline powered farm equipment, miscellaneous	2	Formaldehyde	50000	0.00243 lb/gal	Derived from total aldehyde emissions data	106
Internal combustion engines - mobile	01	Gasoline powered farm equipment, tractor	2	Formaldehyde	50000	0.00419 lb/gal	Derived from total aldehyde emissions data	106
Internal combustion engines - mobile	16	Diesel powered construction equipment, miscellaneous	2	Formaldehyde	50000	0.00397 lb/gal	Derived from total aldehyde emissions data	106
Internal combustion engines - mobile	16	Diesel powered construction equipment, motor grader	2	Formaldehyde	50000	0.00265 lb/gal	Derived from total aldehyde emissions data	106
Internal combustion engines - mobile	16	Diesel powered construction equipment, off-highway truck	2	Formaldehyde	50000	0.00463 lb/gal	Derived from total aldehyde emissions data	106
Internal combustion engines - mobile	16	Diesel powered construction equipment, roller	2	Formaldehyde	50000	0.00375 lb/gal	Derived from total aldehyde emissions data	106
Internal combustion engines - mobile	16	Diesel powered construction equipment, scraper	2	Formaldehyde	50000	0.00573 lb/gal	Derived from total aldehyde emissions data	106
Internal combustion engines - mobile	16	Diesel powered construction equipment, trackloying loader	2	Formaldehyde	50000	0.0022 lb/gal	Derived from total aldehyde emissions data	106

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Internal combustion engines - mobile	16	Diesel powered construction equipment, tracklaying tractor	2	Formaldehyde	50000	0.00375 lb/gal	Derived from total aldehyde emissions data	106
Internal combustion engines - mobile	16	Diesel powered construction equipment, wheeled dozer	2	Formaldehyde	50000	0.00353 lb/gal	Derived from total aldehyde emissions data	106
Internal combustion engines - mobile	16	Diesel powered construction equipment, wheeled loader	2	Formaldehyde	50000	0.00441 lb/gal	Derived from total aldehyde emissions data	106
Internal combustion engines - mobile	16	Diesel powered construction equipment, wheeled tractor	2	Formaldehyde	50000	0.00617 lb/gal	Derived from total aldehyde emissions data	106
Internal combustion engines - mobile	16	Gasoline powered construction equipment, miscellaneous	2	Formaldehyde	50000	0.00264 lb/gal	Derived from total aldehyde emissions data	106
Internal combustion engines - mobile	16	Gasoline powered construction equipment, motor grader	2	Formaldehyde	50000	0.00353 lb/gal	Derived from total aldehyde emissions data	106
Internal combustion engines - mobile	16	Gasoline powered construction equipment, roller	2	Formaldehyde	50000	0.00287 lb/gal	Derived from total aldehyde emissions data	106
Internal combustion engines - mobile	16	Gasoline powered construction equipment, wheeled loader	2	Formaldehyde	50000	0.00287 lb/gal	Derived from total aldehyde emissions data	106
Internal combustion engines - mobile	16	Gasoline powered construction equipment, wheeled tractor	2	Formaldehyde	50000	0.00353 lb/gal	Derived from total aldehyde emissions data	106
Internal combustion engines - mobile	401	Locomotives	2	Formaldehyde	50000	0.00331 lb/gal	Derived from total aldehyde emission test data	106
Internal combustion engines - mobile	41	Diesel fuel	28888801	Ammonia	7664417	0.95 lb/1000 gal. fuel burned	Sources emitting > 100 tons NH3/year, emission factor rating E	179
Internal combustion engines - mobile	41	Leaded gasline	28888801	Ammonia	7664417	0.42 lb/1000 gal. fuel burned	Sources emitting > 100 tons NH3/year, emission factor rating D	179
Internal combustion engines - mobile	41	Unleaded fuel	28888801	Ammonia	7664417	0.63 lb/1000 gal. fuel burned	Sources emitting > 100 tons NH2/year, emission factor rating D	179
Internal combustion engines - mobile	45	Jet aircraft	2	Formaldehyde	50000	0.00419 lb/gal	Derived from total aldehyde emissions data	106

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INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Internal combustion engines - mobile	4581	Jet engine exhaust	2	Benzene	71432	13.4 lb/ton total hydrocarbons emitted	Benzene assumed to be 0.067% of HC emissions	92
Internal combustion engines - mobile	4581	Jet engine exhaust	2	Xylenes (mixed isomers)	1330207	282 lb/ton total hydrocarbons emitted	Xylene assumed to be 14.1% of HC emissions	92
Internal combustion engines - stationary		Reciprocating engine - distillate oil fuel		Beryllium	7440417	0.069 lb/10E12 Btu	Uncontrolled emissions	213
Internal combustion engines - stationary		Gas turbine - distillate oil fuel		Beryllium	7440417	0.324 lb/10E12 Btu	Uncontrolled emissions	213
Internal combustion engines - stationary		Gas turbines	2	Formaldehyde	50000	9,276 lb/10E12 Btu heat input	Uncontrolled, calculated based on engineering judgement	106
Internal combustion engines - stationary		Gas-fired reciprocating engines	2	Formaldehyde	50000	13,218 lb/10E12 Btu heat input	Uncontrolled, calculated based on engineering judgement	106
Internal combustion engines - stationary		Gasoline and diesel-powered industrial equipment	202	Formaldehyde	50000	30,610 lb/10E13 Btu heat input	Uncontrolled, calculated based on engineering judgement	106
Internal combustion engines - stationary		Reciprocating engine - natural gas fuel	20200202	Mercury	7439976	11.363 lb/10E12 Btu	Uncontrolled emissions	213
Internal combustion engines - stationary		Reciprocating engine - distillate oil fuel	20200102	Mercury	7439976	0.3014 lb/10E12 Btu	Uncontrolled emissions	213
Internal combustion engines - stationary		Gas turbine - natural gas fuel	20200201	Mercury	7439976	11.363 lb/10E12 Btu	Uncontrolled emissions	213
Internal combustion engines - stationary		Gas turbine - distillate oil fuel	20200101	Mercury	7439976	0.9044 lb/10E12 Btu	Uncontrolled emissions	213
Internal combustion engines - stationary		Distillate oil-fired gas turbine	101002	Sulfuric acid	7664939	1.739 lb/10E12 Btu	Controlled emissions, FGD system with 50% efficiency for sulfuric acid mist	213
Internal combustion engines - stationary		Distillate oil-fired gas turbine	101002	Sulfuric acid	7664939	3.478 lb/10E12 Btu	Uncontrolled emissions	213
Internal combustion engines - stationary		Distillate oil-fired reciprocating engine		Sulfuric acid	7664939	4.5 x S sulfur in fuel ng/J	Controlled emissions, FGD system with 50% efficiency on sulfuric acid mist	213
Internal combustion engines - stationary		Distillate oil-fired reciprocating engine		Sulfuric acid	7664939	8.9 x S sulfur in fuel ng/J	Uncontrolled emissions	213
Iron (gray) foundries	3321	Entire process	304003	Manganese	7439965	0.308 lb/ton metal produced	Based on engineering estimates	13
Iron and steel foundry	332	Green sand shakeout	304	Cadmium	7440439	2.652 x 10E-6 lb/ton metal cast	Uncontrolled, Cd dust less than 3 um size only	47

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Iron and steel production	3312	Electric arc furnace (alloy steel)	30300904	Carbon monoxide	630080	4.9-6.5 lbs/ton of steel produced	Controlled by fabric filter, emissions collected by building evacuation, avg of 3 tests 5.6 lbs/ton	196
Iron and steel production	3312	Electric arc furnace (carbon steel)	30300908	Carbon monoxide	630080	0.54-1.07 lbs/ton of steel produced	Ctrl by venturi scrubber, emissions collected by direct shell evacuation, avg 3 tests 0.76 lbs/ton	196
Iron and steel production	3312	Electric arc furnace (carbon steel)	30300908	Carbon monoxide	630080	0.54-1.39 lbs/ton of steel produced	Ctrl by fabric filter, emissions collected by direct shell evacuation, avg 3 tests 1.04 lbs/ton	196
Iron and steel production	3312	Basic oxygen furnace operations, O-BOP process melting/refining	303009	Copper	7440508	0.01 lb/ton steel produced	Uncontrolled, copper content 0.035%	53,97
Iron and steel production	3312	Basic oxygen furnace operations, O-BOP process melting/refining	303009	Copper	7440508	0.00004 lb/ton steel produced	Open hood, vented to ESP	53,97
Iron and steel production	3312	Basic oxygen furnace operations, charging	30300914	Copper	7440508	0.0002 lb/ton hot metal	At source, copper content 0.035%	53,97
Iron and steel production	3312	Basic oxygen furnace operations, tapping	30300917	Copper	7440508	0.0004 lb/ton steel	At source, copper content 0.035%	53,97
Iron and steel production	3312	Blast furnace	30300822	Copper	7440508	0.002 lb/ton hot metal	Uncontrolled, average copper content 0.25, range 0.051-0.5%	53,97
Iron and steel production	3312	Electric arc furnace - melting/refining	30300908	Copper	7440508	0.1 lb/ton steel produced	Uncontrolled, copper content 0.265%, carbon steel	53,97
Iron and steel production	3312	Electric arc furnace operations, charging/tapping/slagging	30300904	Copper	7440508	0.004 lb/ton steel	Uncontrolled, copper content 0.265%, carbon steel	53,97
Iron and steel production	3312	Open hearth furnace operations, melting/refining	30300901	Copper	7440508	0.04 lb/ton steel	Uncontrolled, copper content 0.16%	53,97
Iron and steel production	3312	Open hearth furnace operations, melting/refining	30300901	Copper	7440508	0.0004 lb/ton steel	Controlled - ESP, copper content 0.16	53,97
Iron and steel production	3312	Sinter plants/sinter discharge	30300814	Copper	7440508	0.006 lb/ton finished sinter	Uncontrolled, copper content 0.104%	53,97
Iron and steel production	3312	Sinter plants/sinter discharge	30300814	Copper	7440508	0.0001 lb/ton finished sinter	Baghouse, copper content 0.104%	53,97
Iron and steel production	3312	Sintering operations, windbox exhaust	30300813	Copper	7440508	0.008 lb/ton finished sinter	Uncontrolled, after coarse PM removal, copper content 0.104%	53,97
Iron and steel production	3312	Sintering operations, windbox exhaust	30300813	Copper	7440508	0.00018 lb/ton finished sinter	Wet ESP, copper content 0.104%	53,97

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Iron and steel production	3312	General emissions	303	Manganese	7439968	0.04 lb/ton iron and steel produced	Based on engineering estimates	13
Iron and steel production	3312	Iron blast furnaces, casthouse emissions	30300825	Manganese	7439968	0.0018 lb/ton of iron	Uncontrolled, calculated based on engineering judgement	107
Iron and steel production	3312	Iron blast furnaces, casthouse emissions	30300825	Manganese	7439968	0.00018 lb/ton of iron	Controlled by runner covers & pickup hoods to fabric filter, calculated based on engineering judge.	107
Iron and steel production	3312	Iron blast furnaces, slips	30300826	Manganese	7439968	0.261 lb/slip	Uncontrolled, calculated based on engineering judgement	107
Iron and steel production	3312	Open hearth furnace operations, melting/refining	30300901	Manganese	7439965	0.078 lb/ton of pig iron	Uncontrolled, calculated based on engineering judgement	107
Iron and steel production	3312	Open hearth furnace operations, melting/refining	30300901	Manganese	7439965	0.001 lb/ton of pig iron	Controlled by ESP, calculated based on engineering judgement	107
Iron and steel production	3312	Open hearth furnace operations, roof monitor	303009	Manganese	7439965	0.0006 lb/ton of pig iron	Uncontrolled, calculated based on engineering judgement	107
Iron and steel production	3312	Open hearth furnace operations, teeming	303009	Manganese	7439965	0.00026 lb/ton of pig iron	Uncontrolled, calculated based on engineering judgement	107
Iron and steel production	3312	Open hearth furnace operations, teeming	303009	Manganese	7439965	6 x 10E-6 lb/ton of pig iron	Controlled by side-draft hood to fabric filter, calculated based on engineering judgement	107
Iron and steel production	3312	Sintering operations, sinter discharge (breaker and hot screen)	303008	Manganese	7439965	0.08 lb/ton of sinter	Uncontrolled, calculated based on engineering judgement	107
Iron and steel production	3312	Sintering operations, sinter discharge	303008	Manganese	7439965	0.0012 lb/ton of sinter	Controlled by fabric filter, calculated based on	107
*)								
*)		engineering judgement and hot screen)						
Iron and steel production	3312	Sintering operations, windbox and discharge	303008	Manganese	7439965	0.0036 lb/ton of sinter	Controlled by fabric filter, calculated based on engineering judgement	107
Iron and steel production	3312	Sintering operations, windbox exhaust	30300813	Manganese	7439965	0.134 lb/ton of sinter	Uncontrolled, calculated based on engineering judgement	107
Iron and steel production	3312	Sintering operations, windbox exhaust	30300813	Manganese	7439965	0.104 lb/ton of sinter	After coarse particle removal, calculated based on engineering judgement	107
Iron and steel production	3312	Sintering operations, windbox exhaust	30300813	Manganese	7439965	0.0192 lb/ton of sinter	Controlled by dry ESP, calculated based on engineering judgement	107

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Iron and steel production	3312	Sintering operations, windbox exhaust	30300813	Manganese	7439965	0.002 lb/ton of sinter	Controlled by wet ESP, calculated based on engineering judgement	107
Iron and steel production	3312	Sintering operations, windbox exhaust	30300813	Manganese	7439965	0.0056 lb/ton of sinter	Controlled by scrubber, calculated based on engineering judgement	107
Iron and steel production	3312	Sintering operations, windbox exhaust	30300813	Manganese	7439965	0.012 lb/ton of sinter	Controlled by cyclone, calculated based on engineering judgement	107
Iron and steel production	3312	Blast furnace	303008	Vanadium	7440622	1.4 x10E-3 lb/ton pig iron produced	Control status/basis unclear	96
Iron foundries	332	Electric arc furnace - melting/refining	30400304	Barium iron oxide	11138117	0.14-0.98 lbs/ton of iron produced	Uncontrolled emissions	184
Iron foundries	332	Electric arc furnace - charge and tap cycle	30400304	Barium iron oxide	11138117	0.014-0.098 lbs/ton of iron produced	Uncontrolled emissions	184
Iron foundries	332	Electric arc furnace - charge and tap cycle	30400304	Chromium (VI) oxide (1:3)	1333820	0.014-0.098 lbs/ton of iron produced	Uncontrolled emissions	184
Iron foundries	332	Electric arc furnace - melting/refining	30400304	Chromium (VI) oxide (1:3)	1333820	0.14-0.98 lbs/ton of iron produced	Uncontrolled emissions	184
Iron foundries	332	Electric arc furnace - charge and tap cycle	30400304	Copper oxide	1317380	0.014-0.056 lbs/ton of iron produced	Uncontrolled emissions	184
Iron foundries	332	Electric arc furnace - melting/refining	30400304	Copper oxide	1317380	0.14-0.56 lbs/ton of iron produced	Uncontrolled emissions	184
Iron foundries	332	Electric arc furnace - charge and tap cycle	30400304	Lead oxide	1317368	0.7-2.8 lbs/ton of iron produced	Uncontrolled emissions	184
Iron foundries	332	Electric arc furnace - melting/refining	30400304	Lead oxide	1317368	7.0-28 lbs/ton of iron produced	Uncontrolled emissions	184
Iron foundries	332	Cupola	30400301	Manganese	7439965	0.25 lb/ton of iron	Uncontrolled, calculated based on engineering judgement	107
Iron foundries	332	Cupola	30400301	Manganese	7439965	0.12 lb/ton of iron	Controlled by wet cap, calculated based on engineering judgement	107
Iron foundries	332	Cupola	30400301	Manganese	7439965	0.075 lb/ton of iron	Controlled by impingement scrubber, calculated based on engineering judgement	107
Iron foundries	332	Cupola	30400301	Manganese	7439965	0.012 lb/ton of iron	Controlled by high energy scrubber, calculated based on engineering judgement	107
Iron foundries	332	Cupola	30400301	Manganese	7439965	0.003 lb/ton of iron	Controlled by fabric filter, calculated based on engineering judgement	107

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Iron foundries	332	Electric arc furnace	30400304	Manganese	7439965	0.15 lb/ton of iron	Uncontrolled, calculated based on engineering judgement	107
Iron foundries	332	Electric arc furnace	30400304	Manganese	7439965	0.0015 lb/ton of iron	Controlled by fabric filter (99%), calculated based on engineering judgement	107
Iron foundries	332	Induction furnace	30400303	Manganese	7439965	0.0225 lb/ton of iron	Uncontrolled, calculated based on engineering judgement	107
Iron foundries	332	Electric arc furnace - charge and tap cycle	30400304	Manganese oxide	1317346	2.8 lbs/ton of iron produced	Uncontrolled emissions	104
Iron foundries	332	Electric arc furnace - melting/refining	30400304	Manganese oxide	1317346	28 lbs/ton of iron produced	Uncontrolled emissions	104
Iron foundries	332	Electric arc furnace - charge and tap cycle	30400304	Nickel(II) oxide (1:1)	1313991	0.014-0.042 lbs/ton of iron produced	Uncontrolled emissions	104
Iron foundries	332	Electric arc furnace - charge and tap cycle	30400304	Nickel(II) oxide (1:1)	1313991	0.14-0.42 lbs/ton of iron produced	Uncontrolled emissions	104
Iron foundries	332	Electric arc furnace - charge and tap cycle	30400304	Tin oxide	18282105	0.028-0.042 lbs/ton of iron produced	Uncontrolled emissions	104
Iron foundries	332	Electric arc furnace - melting/refining	30400304	Tin oxide	18282105	0.28-4.2 lbs/ton of iron produced	Uncontrolled emissions	104
Iron foundries	332	Electric arc furnace - charge and tap cycle	30400304	Zinc oxide	1314132	0.28-2.8 lbs/ton of iron produced	Uncontrolled emissions	104
Iron foundries	332	Electric arc furnace - melting/refining	30400304	Zinc oxide	1314132	2.8-28 lbs/ton of iron produced	Uncontrolled emissions	104
Iron foundries	3321	Cupola	30400301	Copper	7440508	0.0034 lb/ton gray iron produced	Uncontrolled, copper content 0.02%, PM factors	93
Iron ore processing	1011	Entire process	303	Copper	7440508	0.001 lb/ton ore processed	Controlled, based on assumed copper content and PM factors	93
Iron ore production	1011		303	Arsenic	7440382	0.2 lb/ton of crude ore	Reported but unsubstantiated	3
Isophthalic acid production	2869	Fugitive emissions	301	1,3-Xylene	108383	0.2 lb/ton xylene used	Estimated	13
Isophthalic acid production	2869	Process - general	301	1,3-Xylene	108383	1.7 lb/ton xylene used	Estimated	13
Isophthalic acid production	2869	Storage	301	1,3-Xylene	108383	0.1 lb/ton xylene used	Estimated	13
Isopropyl alcohol production	2869	Entire process	301250	Propylene	115071	0.014 lb/ton isopropyl alcohol	Engineering judgement, based on 4189 lb/yr emitted and 5.73 x 10E8 lb/yr production	87

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Land treatment	4953	Petroleum refinery sludge	50300820	Acrylonitrile	107131	0.188 lb/hectare-hr	Based on two different sampling methods at the same site	12
Land treatment	4953	Petroleum refinery sludge	50300820	Toluene	108883	3.08 lb/hectare-hr	Emissions measured within 1 hr. of sludge application to landfill	12
Land treatment	4953	Petroleum refinery sludge	50300820	Xylenes (mixed isomers)	1330207	2.44 lb/hectare-hr	Emissions measured within 1 hr. of sludge application to landfill	12
Landfill	4953	Landfill gas	0	Chloroform	67663	0.61 x 10E-6 volume/volume landfill gas	Average of highest values for 20 landfills in S. California	93
Landfill of HCB waste	4953	Fugitive emissions	501006	Hexachlorobenzene	118741	3.44 x 10E-9 lb/acre/day	Based on engineering estimates, assumes landfill conditions, HCB volatilization	49
Landfill of HCB waste	4953	Fugitive emissions	502006	Hexachlorobenzene	118741	3.44 x 10E-9 lb/acre/day	Based on engineering estimates, assumes landfill conditions, HCB volatilization	49
Lead smelting	3339	Entire process	303010	Radionuclides		42 nCi U-238/metric ton Pb	Rough estimate, control - baghouse, fabric filter or ESP, and acid plant	39
Lead smelting	3339	Entire process	303010	Radionuclides		42 nCi U-234/metric ton Pb	Rough estimate, control - baghouse, fabric filter or ESP, and acid plant	39
Lead smelting	3339	Entire process	303010	Radionuclides		3.6 nCi Th-230/metric ton Pb	Rough estimate, control - baghouse, fabric filter or ESP, and acid plant	39
Lead smelting	3339	Entire process	303010	Radionuclides		2.9 nCi Ra-226/metric ton Pb	Rough estimate, control - baghouse, fabric filter or ESP, and acid plant	39
Lead smelting	3339	Entire process	303010	Radionuclides		130 nCi Pb-210/metric ton Pb	Rough estimate, control - baghouse, fabric filter or ESP, and acid plant	39
Lead smelting	3339	Entire process	303010	Radionuclides		100 nCi Po-210/metric ton Pb	Rough estimate, control - baghouse, fabric filter or ESP, and acid plant	39
Lead smelting	3339	Entire process	303010	Radionuclides		3.5 nCi Th-232/metric ton Pb	Rough estimate, control - baghouse, fabric filter or ESP, and acid plant	39
Lead smelting	3339	Entire process	303010	Radionuclides		3.5 nCi Th-238/metric ton Pb	Rough estimate, control - baghouse, fabric filter or ESP, and acid plant	39
Lime kilns cofiring wastes	3274	Lime kiln	305016	Polychlorinated dibenzofurans, total		Not detectable	1 location, baghouse dust sample, fire petrol, coke + waste organics, detec. lie (1-50)x10E-8 lb/ton	119
Lime kilns cofiring wastes	3274	Lime kiln - stack	305016	Polychlorinated dibenzofurans, total		Not detectable	One location, stack part. sample, fire petrol, coke + waste organics, detec. limit 0.034-2.0 ng/m3	119
Lime kilns cofiring wastes	3274	Lime kiln	305016	Polychlorinated dibenzo-p-dioxins, total		Not detectable	1 location, baghouse dust sample, fire petrol, coke + waste organics, detec. lie (1-50)x10E-8 lb/ton	119

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Lime kilns cofiring wastes	3274	Lime kiln - stack	308016	Polychlorinated dibenzo-p-dioxins, total		Not detectable	One location, stack part. sample, fire petrol. coke + waste organics, detec. limit 0.034-2.0 ng/m3	119
Linear alkylbenzene chlorination process	2869	Atmospheric wash decanter vent	30121124	Benzene	71432	0.0246 lb/ton LAB produced	Uncontrolled	132
Linear alkylbenzene chlorination process	2869	Atmospheric wash decanter vent	30121124	Benzene	71432	9 x 10E-6 lb/ton LAB produced	Controlled, used as fuel, 99.98% eff.	132
Linear alkylbenzene chlorination process	2869	Benzene azeotropic column vent	30121102	Benzene	71432	0.0074 lb/ton LAB produced	Uncontrolled, all LAB chlorination emission factors based on a 1.98 x 10E8 lb/yr hypothetical plant	132
Linear alkylbenzene chlorination process	2869	Benzene azeotropic column vent	30121102	Benzene	71432	1.48 x 10E-6 lb/ton LAB produced	Controlled, used as fuel, 99.98% eff.	132
Linear alkylbenzene chlorination process	2869	Benzene stripping column vent	30121125	Benzene	71432	0.0074 lb/ton LAB produced	Uncontrolled	132
Linear alkylbenzene chlorination process	2869	Benzene stripping column vent	30121125	Benzene	71432	1.48 x 10E-6 lb/ton LAB produced	Controlled, used as fuel, 99.98% eff.	132
Linear alkylbenzene chlorination process	2869	Hydrochloric acid absorber vent	30121123	Benzene	71432	0.5 lb/ton LAB produced	Uncontrolled	132
Linear alkylbenzene chlorination process	2869	Hydrochloric acid absorber vent	30121123	Benzene	71432	1 x 10E-4 lb/ton LAB produced	Controlled, used as fuel, 99.98% eff.	132
Linear alkylbenzene olefin process	2869	Benzene azeotropic column vent	30121101	Benzene	71432	0.0074 lb/ton LAB produced	Uncontrolled, all LAB olefin process emission factors based on 1.98 x 10E8 lb/yr hypothetical plant	132
Linear alkylbenzene olefin process	2869	Benzene azeotropic column vent	30121101	Benzene	71432	1.48 x 10E-6 lb/ton LAB produced	Controlled, used as fuel, 99.98% eff.	132
Linear alkylbenzene olefin process	2869	Hydrogen fluoride scrubber column vent	30121103	Benzene	71432	0.022 lb/ton LAB produced	Uncontrolled	132
Linear alkylbenzene olefin process	2869	Hydrogen fluoride scrubber column vent	30121103	Benzene	71432	4.4 x 10E-6 lb/ton LAB produced	Controlled, used as fuel, 99.98% eff.	132
Linear alkylbenzene olefin process	2869	Hydrogen fluoride scrubber column vent	30121103	Benzene	71432	0.022 lb/ton LAB produced	Controlled, flare, 90% eff.	132
Maleic anhydride production	286	Product recovery absorber	30110002	Benzene	71432	67 lbs/1000 lbs of maleic anhydride prod	Uncontrolled emissions	102
Maleic anhydride production	2869	Fugitive emissions	301150	Xylenes (mixed isomers)	1330207	0.8 lb/ton product	Engineering Judgement, see EPA Source Assessment on Maleic Anhydride	67
Maleic anhydride production	2869	Process emissions	301100	Xylenes (mixed isomers)	1330207	23.2 lb/ton product	Engineering Judgement, see EPA Source Assessment on Maleic Anhydride	67

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Maleic anhydride production	2869	Storage tank emissions	407	Xylenes (mixed isomers)	1330207	0.18 lb/ton product	Engineering judgement, see EPA Source Assessment on Maleic Anhydride	67
Manganese chemical production	2819	Ore drying/grinding	301070	Manganese	7439965	8.9 lb/ton of material processed	Uncontrolled, calculated based on engineering judgement	107
Manganese chemical production	2819	Ore drying/grinding	301070	Manganese	7439965	0.009 lb/ton of material processed	Controlled by fabric filter, calculated based on engineering judgement	107
Manganese chemical production	2819	Ore roasting	301070	Manganese	7439965	110 lb/ton of material processed	Uncontrolled, calculated based on engineering judgement	107
Manganese chemical production	2819	Ore roasting	301070	Manganese	7439965	0.22 lb/ton of material processed	Controlled by fabric filter, calculated based on engineering judgement	107
Manganese dioxide (synthetic) production	2819	Dryer/grinder	301070	Manganese	7439965	8.9 lb/ton of material processed	Uncontrolled, calculated based on engineering judgement	107
Manganese dioxide (synthetic) production	2819	Dryer/grinder	301070	Manganese	7439965	0.009 lb/ton of material processed	Controlled by fabric filter, calculated based on engineering judgement	107
Manganese dioxide (synthetic) production	2819	Packaging and handling	301070	Manganese	7439965	5.4 lb/ton of material processed	Uncontrolled, calculated based on engineering judgement	107
Manganese dioxide (synthetic) production	2819	Packaging and handling	301070	Manganese	7439965	0.0054 lb/ton of material processed	Controlled by fabric filter, calculated based on engineering judgement	107
Manganese dioxide (synthetic) production	2819	Roasting	301070	Manganese	7439965	110 lb/ton of material processed	Uncontrolled, calculated based on engineering judgement	107
Manganese dioxide (synthetic) production	2819	Roasting	301070	Manganese	7439965	0.22 lb/ton of material processed	Controlled by fabric filter, calculated based on engineering judgement	107
Manganese mining	1061	General emissions	305	Manganese	7439965	Negligible	High grade ore no longer mined in U.S.	13
Manganese-bearing ferroalloy prod/electric arc furnace proc.	3313	Crushing and sizing	303	Manganese	7439965	0.90 lb/ton of Mn ore processed	Control status unspecified, calculated based on engineering judgement	107
Manganese-bearing ferroalloy prod/electric arc furnace proc.	3313	Receipt and storage of Mn ore	303	Manganese	7439965	0.90 lb/ton of Mn ore processed	Control status unspecified, calculated based on engineering judgement	107
Manganese-bearing ferroalloy prod/electric arc furnace proc.	3313	Weighing and feeding	303	Manganese	7439965	0.80 lb/ton of Mn ore processed	Control status unspecified, calculated based on engineering judgement	107
Melamine-formaldehyde resin production	2821	Formaldehyde storage	407	Formaldehyde	50000	0.04-0.4 lb/ton of 37% formaldehyde used	Uncontrolled, basis unclear	114
Melamine-formaldehyde resin production	2821	Process - general	30101842	Formaldehyde	50000	0.30-3.0 lb/ton of 37% formaldehyde used	Uncontrolled, basis unclear	114

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Mercury mining	1099	Entire process	303024	Mercury	7439976	0.01 lb/ton of ore mined	Uncontrolled, based on questionnaire survey responses by mine operators in 1960s	113
Methane chlorination	2869	Fugitive emissions	30112514	Methylene chloride	75092	0.64 lb/ton product	Derived from site visit	13
Methane chlorination	2869	Inert gas purge vent/product recovery condenser	30112511	Methylene chloride	75092	0.28 lb/ton product	Derived from site visit	13
Methane chlorination	2869	Storage	407060	Methylene chloride	75092	2.04 lb/ton product	Derived from site visit	13
Methyl chloride chlorination	2869	Fugitive emissions	30112514	Methylene chloride	75092	0.946 lb/ton product	Derived from site visit	13
Methyl chloride chlorination	2869	Inert gas purge vent/product recovery condenser	30112511	Methylene chloride	75092	0.052 lb/ton product	Derived from site visit	13
Methyl chloride chlorination	2869	Storage	407060	Methylene chloride	75092	4.92 lb/ton product	Derived from site visit	13
Methyl chloroform production	2869	Condenser vents/distillation column	30112528	1,1,1-Trichloroethane	71556	1.44 lb/ton produced	From State air emission files	13
Methyl chloroform production	2869	Fugitive emissions/equipment leaks	30112529	1,1,1-Trichloroethane	71556	2 lb/ton produced	Engineering estimate	13
Methyl chloroform production	2869	Storage	407220	1,1,1-Trichloroethane	71556	4.54 lb/ton produced	From State air emission files	13
Methyl chloroform production by hydrochlorination	2869	Heat transfer	30112525	1,1-Dichloroethane	75343	17 lb/ton produced	Control uncertain, based on mass balance and tests	95
Methyl chloroform production by hydrochlorination	2869	Separation unit	30112525	1,1-Dichloroethane	75343	1 lb/ton produced	Control uncertain, based on mass balance and tests	95
Methyl chloroform production by hydrochlorination	2869	Heat transfer	30112525	Hydrogen chloride	7647010	0.02 lb/ton produced	Control uncertain, based on mass balance and tests	95
Methyl chloroform production by hydrochlorination	2869	Separation unit	30112525	Hydrogen chloride	7647010	0.02 lb/ton produced	Control uncertain, based on mass balance and tests	95
Methyl chloroform production by hydrochlorination	2869	Heat transfer	30112525	1,1,1-Trichloroethane	71556	18 lb/ton produced	Control uncertain, based on mass balance and tests	95
Methyl chloroform production by hydrochlorination	2869	Separation unit	30112525	1,1,1-Trichloroethane	71556	1 lb/ton produced	Control uncertain, based on mass balance and tests	95

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INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Methyl chloroform production by hydrochlorination	2869	Separation unit	30112529	Vinyl chloride	75014	1 lb/ton produced	Control uncertain, based on mass balance and tests	95
Methyl chloroform production from ethane	2869	Distillation vent	30112528	1,2-Dichloroethane	107062	0.138 lb/ton methyl chloroform produced	Uncontrolled, based on hypothetical plant with 4.5 x 10E7 lb/yr production capacity	70
Methyl chloroform production from ethane	2869	Distillation vent	30112528	1,2-Dichloroethane	107062	0.002 lb/ton methyl chloroform produced	Controlled by incinerator, based on hypothetical plant with 4.5 x 10E7 lb/yr production capacity	70
Methyl chloroform production from ethane	2869	Distillation vent	30112528	1,1,1-Trichloroethane	71556	0.28 lb/ton methyl chloroform produced	Uncontrolled, based on hypothetical plant with 4.5 x 10E7 lb/yr production capacity	1
Methyl chloroform production from ethane	2869	Distillation vent	30112528	1,1,1-Trichloroethane	71556	0.004 lb/ton methyl chloroform produced	Controlled by incinerator, based on hypothetical plant with 4.5 x 10E7 lb/yr production capacity	1
Methyl chloroform production from ethane	2869	Handling (loading of tank trucks and tank cars)	301125	1,1,1-Trichloroethane	71556	1.22 lb/ton methyl chloroform produced	Assumes submerged loading, based on hypothetical plant with 4.5 x 10E7 lb/yr production capacity	1
Methyl chloroform production from ethane	2869	Handling (loading of tank trucks and tank cars)	301125	1,1,1-Trichloroethane	71556	0.18 lb/ton methyl chloroform produced	Controlled by refrig. condenser, based on hypothetical plant with 4.5 x 10E7 lb/yr production cap.	1
Methyl chloroform production from ethane	2869	Product storage tank vents	407220	1,1,1-Trichloroethane	71556	0.8 lb/ton methyl chloroform produced	Uncontrolled, based on hypothetical plant with 4.5 x 10E7 lb/yr production capacity	1
Methyl chloroform production from ethane	2869	Product storage tank vents	407220	1,1,1-Trichloroethane	71556	0.122 lb/ton methyl chloroform produced	Controlled by refrig. condenser, based on hypothetical plant with 4.5 x 10E7 lb/yr production cap.	1
Methyl chloroform production from ethane	2869	Recycle storage tank vents	30112525	1,1,1-Trichloroethane	71556	0.18 lb/ton methyl chloroform produced	Uncontrolled, based on hypothetical plant with 4.5 x 10E7 lb/yr production capacity	1
Methyl chloroform production from ethane	2869	Recycle storage tank vents	30112525	1,1,1-Trichloroethane	71556	0.02 lb/ton methyl chloroform produced	Controlled by refrig. condenser, based on hypothetical plant with 4.5 x 10E7 lb/yr production cap.	1
Methyl chloroform production from vinyl chloride	2869	Distillation vent	30112528	1,2-Dichloroethane	107062	0.34 lb/ton methyl chloroform produced	Uncontrolled, based on hypothetical plant with 3 x 10E8 lb/yr production capacity	70
Methyl chloroform production from vinyl chloride	2869	Distillation vent	30112528	1,2-Dichloroethane	107062	0.008 lb/ton methyl chloroform produced	Controlled by incinerator, based on hypothetical plant with 3 x 10E8 lb/yr production capacity	70
Methyl chloroform production from vinyl chloride	2869	Hydrochlorinator vent	301125	1,2-Dichloroethane	107062	<0.34 lb/ton of methyl chloroform prod.	Controlled by incineration, calculated based on engineering judgement	51
Methyl chloroform production from vinyl chloride	2869	Hydrochlorinator vent condenser	301125	1,2-Dichloroethane	107062	17 lb/ton of methyl chloroform prod.	Uncontrolled, basis unspecified	51
Methyl chloroform production from vinyl chloride	2869	Steam stripper vent condenser	301125	1,2-Dichloroethane	107062	1 lb/ton of methyl chloroform prod.	Uncontrolled, basis unspecified	51

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INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Methyl chloroform production from vinyl chloride	2869	Handling (loading of tank trucks and tank cars)	301125	1,1,1-Trichloroethane	71556	1.33 lb/ton methyl chloroform produced	Assumes submerged loading, based on hypothetical plant with 3 x 10E8 lb/yr production capacity	1
Methyl chloroform production from vinyl chloride	2869	Handling (loading of tank trucks and tank cars)	301125	1,1,1-Trichloroethane	71556	0.18 lb/ton methyl chloroform produced	Controlled by refrig. condenser, based on hypothetical plant with 3 x 10E8 lb/yr production capacity	1
Methyl chloroform production from vinyl chloride	2869	Intermediate process storage tank vents	30112528	1,1,1-Trichloroethane	71556	0.18 lb/ton methyl chloroform produced	Uncontrolled, based on hypothetical plant with 3 x 10E8 lb/yr production capacity	1
Methyl chloroform production from vinyl chloride	2869	Intermediate process storage tank vents	30112528	1,1,1-Trichloroethane	71556	0.02 lb/ton methyl chloroform produced	Controlled by refrig. condenser, based on hypothetical plant with 3 x 10E8 lb/yr production capacity	1
Methyl chloroform production from vinyl chloride	2869	Product storage tank vents	407220	1,1,1-Trichloroethane	71556	0.00 lb/ton methyl chloroform produced	Uncontrolled, based on hypothetical plant with 3 x 10E8 lb/yr production capacity	1
Methyl chloroform production from vinyl chloride	2869	Product storage tank vents	407220	1,1,1-Trichloroethane	71556	0.122 lb/ton methyl chloroform produced	Controlled by refrig. condenser, based on hypothetical plant with 3 x 10E8 lb/yr production capacity	1
Methyl chloroform production from vinyl chloride	2869	Distillation vent	30112528	Vinyl chloride	75014	0.014 lb/ton methyl chloroform produced	Uncontrolled, based on hypothetical plant with 3 x 10E8 lb/yr production capacity	70
Methyl chloroform production from vinyl chloride	2869	Distillation vent	30112528	Vinyl chloride	75014	0.0002 lb/ton methyl chloroform produced	Controlled by incinerator, based on hypothetical plant with 3 x 10E8 lb/yr production capacity	70
Methylene chloride production	2869	Entire process	30112510	Methylene chloride	75092	4 lb/ton MC produced	Reflects 1983 controls, based on 1983 aggregate auto. production totals for MC producers	69
Methylene chloride production - methane chlorination	2869	Fugitive emissions	30112514	Chloroform	67663	0.34 lb/ton product	Derived from site visit	13
Methylene chloride production - methane chlorination	2869	Inert gas purge vent/product recovery condenser	301125	Chloroform	67663	8.0 x 10E-3 lb/ton product	Derived from site visit	13
Methylene chloride production - methane chlorination	2869	Storage	407040	Chloroform	67663	0.578 lb/ton product	Derived from site visit	13
Methylene chloride production - methyl chloride chlorination	2869	Fugitive emissions	30112514	Chloroform	67663	0.494 lb/ton product	Derived from site visit	13

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Methylene chloride production - methyl chloride chlorination	2869	Inert gas purge vent/product recovery condenser	301129	Chloroform	67663	0.016 lb/ton product	Derived from site visit	13
Methylene chloride production - methyl chloride chlorination	2869	Storage	407060	Chloroform	67663	1.95 lb/ton product	Derived from site visit	13
Methylene di-para-phenylene isocyanate (MDI) production	2865	Process - general	301	Phosgene	75445	0.0132 lb/ton produced	Derived from State air emission files	13
Methylmethacrylate-butadiene- styrene resin production	2821	Equipment leak		1,3-Butadiene	106990	12.4 tons/yr	Uncontrolled based on one plant's data	144
Methylmethacrylate-butadiene- styrene resin production	2821	Equipment leak		1,3-Butadiene	106990	10.7 tons/yr	Controlled (unspecified), based on the average of 2 facilities	144
Methylmethacrylate-butadiene- styrene resin production	2821	Process vents		1,3-Butadiene	106990	9.3 tons/yr	Uncontrolled based on one plant's data	144
Methylmethacrylate-butadiene- styrene resin production	2821	Process vents		1,3-Butadiene	106990	1.8 lb/ton MBS produced	Controlled (unspecified) based on one plant's	144
Methylthiohydroxybutanoic acid production	2869	Acrolein vent collection header		Acrolein	107028	<0.04 lb/ton MMBA produced	Incinerator with scrubber	140
Mineral wool manufacturing	3296	Mineral wool cupola	30501701	Carbon monoxide	630080	4-312 lbs/ton of mineral wool produced	Uncontrolled emissions, average of 9 tests was 154 lbs/ton	187
Mineral wool manufacturing	3296	Mineral wool cupola	30501701	Hydrogen sulfide	7783064	3.0 lbs/ton of mineral wool produced	Uncontrolled emissions, average of 3 tests	187
Municipal waste combustion	4953	Mass burn unit stack	50100102	Acetaldehyde	75070	8.6 x 10E-9 lb/ton waste burned	From test results, no data on controls	130
Municipal waste combustion	4953	Modular burn unit stack	50100101	Acetaldehyde	75070	4.4 x 10E-10 lb/ton waste burned	From test results, no data on controls	130
Municipal waste combustion	4953	Refuse derived fuel unit stack	50100121	Acetaldehyde	75070	3.0 x 10E-9 lb/ton waste burned	From test results, no data on controls	130
Municipal waste combustion	4953	Mass burn unit	50100101	Acrolein	107028	6.8 x 10E-9 lb/ton waste	Control not described	140
Municipal waste combustion	4953	Modular burn unit	50100101	Acrolein	107028	1.1 x 10E-10 lb/ton	Control not described	140

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Municipal waste combustion	4953	Refuse derived fuel incinerator	50100101	Acrolein	107028	3.2 x 10E-10 lb/ton waste	Control not described	140
Municipal waste combustion	4953	Incinerator stack	501001	Aluminum	7429905	0.14 lb/ton munic. solid waste-dry wt.	Controlled by spray-baffle scrubber, based on material balance for model incinerator	98
Municipal waste combustion	4953	Mass burn, refractory facility	501001	Arsenic	7440382	0.0238 lb/ton controlled particulate emissions	Controlled by ESP, based on source test	118
Municipal waste combustion	4953	Mass burn, water wall incinerator	501001	Arsenic	7440382	0.67 lb/ton controlled particulate emissions	Controlled by ESP, based on source tests	118
Municipal waste combustion	4953	Modular incinerator	501001	Arsenic	7440382	0.706 lb/ton controlled particulate emissions	Controlled by ESP, based on source tests	118
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Arsenic	7440382	0.18 lb/ton controlled particulate emissions	Controlled by ESP, based on source tests	118
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Arsenic	7440382	0.004 lb/ton RDF combusted	100% RDF fuel only, ESP control only, overall average of several source averages, range is 0.002 - 0.008 lb/ton	180
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Arsenic	7440382	0.007 lb/ton RDF combusted	100% RDF fuel only, uncontrolled, overall range of several source averages	180
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Arsenic	7440382	0.003 - 0.011 lb/ton RDF combusted	100% RDF only, uncontrolled, overall range of several source averages	180
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Arsenic	7440382	4.6 x 10E-5 lb/ton RDF combusted	Spray drying after acid gas and PM control, detection limit reported, 100% RDF fuel only, average value, range is 2.0 x 10-5 - 0.0001 lb/ton	180
Municipal waste combustion	4953	Modular starved-air combustor	501001	Arsenic	7440382	0.0002 lb/ton feed	ESP control only, overall average of several source averages, range is 4.4 x 10-6 - 0.00032 lb/ton	180
Municipal waste combustion	4953	Modular starved-air combustor	501001	Arsenic	7440382	0.0034 lb/ton feed	Uncontrolled, overall average of several source averages, range is 5.2 x 10E-5 - 0.001 lb/ton	180
Municipal waste combustion	4953	Modular excess-air combustor	501001	Arsenic	7440382	9 x 10E-6 lb/ton feed	ESP control only, overall average of several source averages, range is 8.6 x 10E-6 - 9.2 x 10E-6 lb/ton	180
Municipal waste combustion	4953	Modular excess-air combustor	501001	Arsenic	7440382	1 x 10E-10 lb/ton feed	Dry sorbent injection after acid gas and PM control, one data point only	180
Municipal waste combustion	4953	Mass burn, water wall incinerator	501001	Arsenic	7440382	0.0032 lb/ton feed	Uncontrolled, one data point only	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	Arsenic	7440382	4.4 x 10E-5 lb/ton feed	Capacity > 600 tons/day, ESP control only, overall average of several source averages, range is 2.6 x 10E-5 - 6 x 10E-5 lb/ton	180

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INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	Arsenic	7440382	0.0020 lb/ton feed	Capacity > 600 tons/day, Uncontrolled, one data point only	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	Arsenic	7440382	3.8 x 10E-5 lb/ton feed	Capacity > 600 tons/day, spray drying after acid gas and PM control,average of source averages, range is 3.4 x 10E-6 - 4.2 x 10E-5 lb/to	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Arsenic	7440382	4.2 x 10E-5 lb/ton feed	Capacity < 600 tons/day, ESP control only, overall average of several source averages, range is 1.0 x 10E-5 - 7 x 10E-5 lb/ton	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Arsenic	7440382	3.6 x 10E-6 lb/ton feed	Capacity < 600 tons/day, spray drying after acid gas and PM control, one data point only	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Arsenic	7440382	4.0 x 10E - 8 lb/ton feed	Capacity < 600 tons/day, dry sorbent injection after acid gas and PM control, one data point only	180
Municipal waste combustion	4953	Mass burn waterwall combustor, built before 1980	501001	Arsenic	7440382	0.0012 lb/ton feed	ESP control only, overall average of several source averages, range is 0.00026 - 0.002 lb/ton	180
Municipal waste combustion	4953	Mass burn waterwall combustor, built before 1980	501001	Arsenic	7440382	0.008 lb/ton feed	Uncontrolled, overall average of several source averages, range is 0.00084 - 0.015 lb/ton	180
Municipal waste combustion	4953	Mass burn, refractory facility	501001	Arsenic	7440382	1.6 x 10E-6 lb/ton feed	Spray drying after acid gas and PM control, one data point only	150
Municipal waste combustion	4953	Mass burn, refractory facility	501001	Arsenic	7440382	0.0004 lb/ton feed	Uncontrolled, one data point only	180
Municipal waste combustion	4953	Incinerator stack	501001	Barium	7440393	0.004 lb/ton munic. solid waste-dry wt.	Controlled by spray-baffle scrubber, based on material balance for model incinerator	98
Municipal waste combustion	4953	Incinerator	50100101	Benzo(a)pyrene	50328	5.8 ng/m3	ESP, represents both gaseous and particulate PAH	114
Municipal waste combustion	4953	Mass burn, heat recovery facility	501001	Benzo(a)pyrene	50328	9.6 x 10E-5 lb/ton of waste combusted	Controlled by ESP, based on source test data	118
Municipal waste combustion	4953	Mass burn, heat recovery facility	501001	Benzo(a)pyrene	50328	6 x 10E-6 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Municipal waste combustion	4953	Mass burn, nonheat recovery facility	501001	Benzo(a)pyrene	50328	9.6 x 10E-5 lb/ton of waste combusted	Controlled by ESP, based on source test data	118
Municipal waste combustion	4953	Mass burn, nonheat recovery facility	501001	Benzo(a)pyrene	50328	6 x 10E-6 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Municipal waste combustion	4953	Mass burn, water wall incinerator	501001	Benzo(a)pyrene	50328	9.6 x 10E-8 lb/ton waste burned	ESP	114
Municipal waste combustion	4953	Modular incinerator	501001	Benzo(a)pyrene	50328	7.4 x 10E-6 lb/ton of waste combusted	Controlled by ESP, based on source test data	118
Municipal waste combustion	4953	Modular incinerator	501001	Benzo(a)pyrene	50328	4 x 10E-7 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Municipal waste combustion	4953	Multiple chamber, reciprocating stoker grate	50100101	Benzo(a)pyrene	50328	2.7 x 10E-8 lb/ton waste burned	Uncontrolled, represents particulate PDM	114
Municipal waste combustion	4953	Multiple chamber, reciprocating stoker grate	50100101	Benzo(a)pyrene	50328	4 x 10E-7 lb/ton waste burned	Wet scrubber, represents particulate PDM	114
Municipal waste combustion	4953	Multiple chamber, traveling grate incinerator	50100101	Benzo(a)pyrene	50328	3.4 x 10E-7 lb/ton waste burned	Represents particulate PDM, settling chamber	114
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Benzo(a)pyrene	50328	2.62 x 10E-4 lb/ton waste burned	ESP	114
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Benzo(a)pyrene	50328	2.6 x 10E-4 lb/ton of waste combusted	Controlled by ESP, based on source test data	118, 180
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Benzo(a)pyrene	50328	1.6 x 10E-5 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Municipal waste combustion	4953	Modular starved-air combustor	501001	Benzo(a)pyrene	50328	7.8 x 10E-6 lb/ton feed	Uncontrolled, one data point only	180
Municipal waste combustion	4953	Modular excess-air combustor	501001	Benzo(a)pyrene	50328	4.4 x 10E-5 lb/ton feed	ESP control only, one data point only	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	Benzo(a)pyrene	50328	0.00012 lb/ton feed	Capacity > 400 tons/day, ESP control only, one data point only, detection limit reported	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	Benzo(a)pyrene	50328	0.00012 lb/ton feed	Capacity > 400 tons/day, uncontrolled, one data point only, detection limit reported	180
Municipal waste combustion	4953	Mass burn waterwall combustor, built before 1980	501001	Benzo(a)pyrene	50328	9.6 x 10E-6 lb/ton feed	ESP control only, overall average of several source averages, range is 8.0 x 10E-6 - 1.1 x 10E-5	180
Municipal waste combustion	4953	Mass burn, refractory facility	501001	Beryllium	7440417	0.0238 lb/ton controlled particulate emissions	Controlled by ESP, based on source test	118

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Municipal waste combustion	4953	Mass burn, water wall incinerator	501001	Beryllium	7440417	1.82 x 10E-4 lb/ton controlled particulate	Controlled by ESP, based on source tests	118
Municipal waste combustion	4953	Modular incinerator	501001	Beryllium	7440417	7.2 x 10E-8 lb/ton controlled particulate emissions	Controlled by ESP, based on source test	118
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Beryllium	7440417	0.13 lb/ton controlled particulate emissions	Controlled by ESP, based on source test	118
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Beryllium	7440417	0.0001 lb/ton RDF combusted	100% RDF fuel only, ESP control only, overall average of several source averages, range is 9.4 x 10E-7 - 0.0002 lb/ton	180
Municipal waste combustion	4953	Modular starved-air combustor	501001	Beryllium	7440417	6.4 x 10E-7 lb/ton feed	ESP control only, overall average of several source averages, range is 4.4 x 10E-7 - 8.2 10E-7 lb/ton	180
Municipal waste combustion	4953	Modular starved-air combustor	501001	Beryllium	7440417	2.6 x 10E-6 lb/ton feed	Uncontrolled, overall average of several source averages, range is 8.6 x 10E-7 - 3.6 x 10E-6 lb/ton	180
Municipal waste combustion	4953	Modular excess-air combustor	501001	Beryllium	7440417	1.9 x 10E-5 lb/ton feed	ESP control only, detection limit reported, overall avg., range is 4.2 x 10E-6 - 3.4 x 10E-5 lb/ton	180
Municipal waste combustion	4953	Mass burn, water wall incinerator	501001	Beryllium	7440417	4.8 x 10E-5 lb/ton feed	Uncontrolled, one data point only	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	Beryllium	7440417	1.24 x 10E-7 lb/ton feed	Capacity > 600 tons/day, ESP control only, one data point only	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	Beryllium	7440417	4 x 10E-6 lb/ton feed	Capacity > 600 tons/day, spray drying after acid gas and PM control, det.limit, overall avg., range is 3.8 x 10E-6 - 4 x 10E-6 lb/ton	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Beryllium	7440417	2.4 x 10E-8 lb/ton feed	Capacity < 600 tons/day, ESP control only, one data point only	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Beryllium	7440417	1.3 x 10E-8 lb/ton feed	Capacity < 600 tons/day, spray drying after acid gas and PM control, overall average of several source averages	180
Municipal waste combustion	4953	Mass burn waterwall combustor, built before 1980	501001	Beryllium	7440417	4.8 x 10E-7 lb/ton feed	Uncontrolled, one data point only	180
Municipal waste combustion	4953	Mass burn waterwall combustor, built before 1980	501001	Beryllium	7440417	3.4 x 10E-7 lb/ton feed	ESP control only, overall average of several source averages, range is 1.8 x 10E-7 - 4.8 x 10E-7	180
Municipal waste combustion	4953	Mass burn, refractory facility	501001	Beryllium	7440417	1.6 x 10E-6 lb/ton feed	Spray drying after acid gas and PM control, one data point only	180

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Municipal waste combustion	4953	Mass burn, refractory facility	501001	Beryllium	7440417	3.6 x 10E-4 lb/ton feed	ESP control only, overall average of several source averages, range is 1.5 x 10E-4 - 8 x 10E-4	180
Municipal waste combustion	4953	Mass burn, refractory facility	501001	Beryllium	7440417	.0003 lb/ton feed	Uncontrolled, one data point only	180
Municipal waste combustion	4953	Incinerator stack	501001	Cadmium	7440439	0.008 lb/ton munic solid waste-dry wt.	Controlled by spray-baffle scrubber, based on material balance for model incinerator	98
Municipal waste combustion	4953	Mass burn, refractory facility	501001	Cadmium	7440439	2.496 lb/ton controlled particulate emissions	Controlled by ESP, based on source tests	118
Municipal waste combustion	4953	Mass burn, water wall incinerator	501001	Cadmium	7440439	1.372 lb/ton controlled particulate emissions	Controlled by ESP, based on source tests	118
Municipal waste combustion	4953	Modular incinerator	501001	Cadmium	7440439	4.62 lb/ton controlled particulate emissions	Controlled by ESP, based on source tests	118
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Cadmium	7440439	0.212 lb/ton controlled particulate emissions	Controlled by ESP, based on source test	118
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Cadmium	7440439	0.0009 lb/ton RDF combusted	100% RDF fuel only, ESP control only, overall average of several source averages, range is 0.00032 - 0.0018 lb/ton	180
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Cadmium	7440439	0.004 lb/ton RDF combusted	100% RDF fuel only, uncontrolled, overall average of several source averages	180
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Cadmium	7440439	3.8 x 10E-5 lb/ton RDF combusted	Spray drying after acid gas and PM control, one data point, lower detection limit reported, 100% RDF fuel only	180
Municipal waste combustion	4953	Modular starved-air combustor	501001	Cadmium	7440439	0.0008 lb/ton feed	ESP control only, overall average of several source averages, range is 0.00017 - 0.0017 lb/ton	180
Municipal waste combustion	4953	Modular starved-air combustor	501001	Cadmium	7440439	0.0054 lb/ton feed	Uncontrolled, overall average of several source averages, range is 0.002 - 0.0076 lb/ton	180
Municipal waste combustion	4953	Modular excess-air combustor	501001	Cadmium	7440439	0.00013 lb/ton feed	ESP control only, one data point only	180
Municipal waste combustion	4953	Modular excess-air combustor	501001	Cadmium	7440439	1.2 x 10E-10 lb/ton feed	Dry sorbent injection after acid gas and PM control, one data point only	180
Municipal waste combustion	4953	Mass burn, water wall incinerator	501001	Cadmium	7440439	0.024 lb/ton feed	Uncontrolled, one data point only	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	Cadmium	7440439	0.00018 lb/ton feed	Capacity > 400 tons/day, ESP control only, overall average of several source averages, range is 5.8 x 10E-5 - 0.00030 lb/ton	180

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	Cadmium	7440439	0.00018 lb/ton feed	Capacity > 400 tons/day, spray drying after acid gas and PM control,overall avg. of several source avgs., range is 0.00016 - 0.00019 lb/ton	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Cadmium	7440439	0.008 lb/ton feed	Capacity < 400 tons/day, uncontrolled, one data point only	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Cadmium	7440439	0.00050 lb/ton feed	Capacity < 400 tons/day, ESP control only, overall average of several source averages, range is 0.00018 - 0.00082	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Cadmium	7440439	4.8 x 10E-5 lb/ton feed	Capacity < 400 tons/day, spray drying after acid gas and PM control,overall avg. of several source avgs., range is 2.4 x 10E-5 - 7.0 x 10E-5	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Cadmium	7440439	4.0 x 10E-5 lb/ton feed	Capacity < 400 tons/day, dry sorbent injection after acid gas and PM control, one data point only	180
Municipal waste combustion	4953	Mass burn waterwall combustor, built before 1980	501001	Cadmium	7440439	0.0032 lb/ton feed	ESP control only, overall average of several source averages, range is 0.0024 - 0.0046 lb/ton	180
Municipal waste combustion	4953	Mass burn waterwall combustor, built before 1980	501001	Cadmium	7440439	0.022 lb/ton feed	Uncontrolled, overall average of several source averages, range is 0.0074 - 0.052 lb/ton	180
Municipal waste combustion	4953	Mass burn waterwall combustor, built before 1980	501001	Cadmium	7440439	7.2 x 10E-5 lb/ton feed	Dry sorbent injection after acid gas and PM control, one data point only	180
Municipal waste combustion	4953	Mass burn, refractory facility	501001	Cadmium	7440439	0.0001 lb/ton feed	Spray drying after acid gas and PM control, one data point only	180
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Chlorobenzene	108907	1.7 x 10E-5 lb/ton	100% RDF fuel only, ESP control only, one data point only	180
Municipal waste combustion	4953	Modular starved-air combustor	501001	Chlorobenzene	108907	3.4 x 10E-5 lb/ton	Uncontrolled, overall average of several source averages, range is 2.6 x 10E-5 - 4.4 x 10E-5 lb/ton	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	Chlorobenzene	108907	6.4 x 10E-6 lb/ton feed	Capacity > 400 tons/day, ESP control only, overall average of several source averages, range is 5.6 x 10E-6 - 7.0 x 10E-6 lb/ton	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	Chlorobenzene	108907	6.4 x 10E-6 lb/ton feed	Capacity > 400 tons/day, uncontrolled, one data point only, detection limit reported	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Chlorobenzene	108907	5.8 x 10E-5 lb/ton feed	Capacity < 400 tons/day, ESP control only, overall avg. of several source avgs., range is 2.4 x 10E-5 - 1.04 x 10E-4 lb/ton	180

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Municipal waste combustion	4953	Mass burn waterwall combustor, built before 1980	501001	Chlorobenzene	108907	0.00082 lb/ton feed	ESP control only, overall average of several source averages, range is 1.8 x 10E-6 - 0.0028 lb/ton	180
Municipal waste combustion	4953	Mass burn waterwall combustor, built before 1980	501001	Chlorobenzene	108907	2 x 10E-6 lb/ton feed	Uncontrolled, one data point only	180
Municipal waste combustion	4953	Existing mass burn heat recovery facility	501001	Chlorobenzenes		6.4 x 10E-4 lb/ton of waste combusted	Controlled by ESP, based on source tests	118
Municipal waste combustion	4953	Existing mass burn heat recovery facility	501001	Chlorobenzenes		4 x 10E-5 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Municipal waste combustion	4953	Mass burn, nonheat recovery facility	501001	Chlorobenzenes		6.4 x 10E-4 lb/ton of waste combusted	Controlled by ESP, based on source tests	118
Municipal waste combustion	4953	Mass burn, nonheat recovery facility	501001	Chlorobenzenes		4 x 10E-5 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Municipal waste combustion	4953	Modular incinerator	501001	Chlorobenzenes		3.6 x 10E-5 lb/ton of waste combusted	Controlled by ESP, based on source tests	118
Municipal waste combustion	4953	Modular incinerator	501001	Chlorobenzenes		2 x 10E-6 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Municipal waste combustion	4953	Projected or state-of-the-art mass burn heat recovery facility	501001	Chlorobenzenes		1.78 x 10E-5 lb/ton of waste combusted	Controlled by ESP, based on source test	118
Municipal waste combustion	4953	Projected or state-of-the-art mass burn heat recovery facility	501001	Chlorobenzenes		1.2 x 10E-6 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Chlorobenzenes		2.8 x 10E-4 lb/ton of waste combusted	Controlled by ESP, based on source tests	118
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Chlorobenzenes		1.8 x 10E-5 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Chlorophenol	25167800	0.0002 lb/ton RDF combusted	100% RDF fuel only, ESP control only, one data point only	180
Municipal waste combustion	4953	Modular starved-air combustor	501001	Chlorophenol	25167800	3.4 x 10E-5 lb/ton feed	Uncontrolled, overall average of several source averages, range is 2.2 x 10E-5 - 5.8 x 10E-5 lb/ton	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	Chlorophenol	25167800	9.2 x 10E-6 lb/ton feed	Capacity > 600 tons/day, ESP control only, overall average of several source averages, range is 8.0 x 10E-6 - 1.04 x 10E-5 lb/ton	180

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	Chlorophenol	25167800	1.2 x 10E-5 lb/ton feed	Capacity > 600 tons/day, uncontrolled, one data point only, detection limit reported	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Chlorophenol	25167800	0.00013 lb/ton feed	Capacity < 600 tons/day, ESP control only, overall average of several source averages, range is 4.4 x 10E-5 - 0.00026 lb/ton	180
Municipal waste combustion	4953	Mass burn waterwall combustor, built before 1980	501001	Chlorophenol	25167800	0.0012 lb/ton feed	ESP control only, overall average of several source averages, range is 3.6 x 10E-5 - 0.0019 lb/ton	180
Municipal waste combustion	4953	Existing mass burn heat recovery facility	501001	Chlorophenols		9.2 x 10E-4 lb/ton of waste combusted	Controlled by ESP, based on source tests	118
Municipal waste combustion	4953	Existing mass burn heat recovery facility	501001	Chlorophenols		6 x 10E-5 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Municipal waste combustion	4953	Mass burn, nonheat recovery facility	501001	Chlorophenols		9.2 x 10E-4 lb/ton of waste combusted	Controlled by ESP, based on source tests	118
Municipal waste combustion	4953	Mass burn, nonheat recovery facility	501001	Chlorophenols		6 x 10E-5 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Municipal waste combustion	4953	Modular incinerator	501001	Chlorophenols		3.6 x 10E-5 lb/ton of waste combusted	Controlled by ESP, based on source tests	118
Municipal waste combustion	4953	Modular incinerator	501001	Chlorophenols		2 x 10E-6 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Municipal waste combustion	4953	Projected or state-of-the-art mass burn heat recovery facility	501001	Chlorophenols		3.6 x 10E-5 lb/ton of waste combusted	Controlled by ESP, based on source test	118
Municipal waste combustion	4953	Projected or state-of-the-art mass burn heat recovery facility	501001	Chlorophenols		2 x 10E-6 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Chlorophenols		3.6 x 10E-4 lb/ton of waste combusted	Controlled by ESP, based on source tests	118
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Chlorophenols		2 x 10E-5 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Municipal waste combustion	4953	Incinerator stack	501001	Chromium	7440473	0.004 lb/ton munic. solid waste-dry wt.	Controlled by spray-baffle scrubber, based on material balance for model incinerator	98
Municipal waste combustion	4953	Multiple hearth furnace	50100101	Chromium	7440473	0.0078 lb/ton solid waste incinerated	Refuse only, wet scrubber, total chromium	161

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INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Municipal waste combustion	4953	Multiple hearth furnace	50100101	Chromium	7440473	0.0092 lb/ton solid waste incinerated	Refuse and sludge, wet scrubber, total chromium	161
Municipal waste combustion	4953	Rocking bar grate	501001	Chromium	7440473	0.0048 lb/ton solid waste incinerated	Wet scrubber, total chromium	161
Municipal waste combustion	4953	Traveling grate	501001	Chromium	7440473	0.0006 lb/ton solid waste incinerated	ESP, total chromium	161
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Chromium	7440473	0.022 lb/ton RDF combusted	100% RDF fuel only, ESP control, overall average of several source averages, range is 0.0009 - 0.044 lb/ton	180
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Chromium	7440473	0.013 lb/ton RDF combusted	100% RDF fuel only, uncontrolled, overall average of several source averages, range is 0.0094 - 0.0164 lb/ton	180
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Chromium	7440473	0.00046 lb/ton RDF combusted	Spray drying after gas and PM ctrl, overall avg of several source averages, 100% RDF fuel only, range is 3.4 x 10E-5 - 0.0013 lb/ton	180
Municipal waste combustion	4953	Modular starved-air combustor	501001	Chromium	7440473	0.0002 lb/ton feed	ESP only, overall average of several source averages, range is 2.8 x 10E-5 - 0.00038 lb/ton	180
Municipal waste combustion	4953	Modular starved-air combustor	501001	Chromium	7440473	0.0014 lb/Mg feed	Uncontrolled, overall average of several source averages, range is 3.4 x 10E-5 - 0.0072 lb/ton	180
Municipal waste combustion	4953	Modular excess-air combustor	501001	Chromium	7440473	0.003 lb/ton feed	ESP control only, one data point only	180
Municipal waste combustion	4953	Modular excess-air combustor	501001	Chromium	7440473	2 x 10E-9 lb/ton feed	Dry sorbent injection after acid gas and PM control, one data point only	180
Municipal waste combustion	4953	Mass burn, water wall incinerator	501001	Chromium	7440473	0.007 lb/ton feed	Uncontrolled, one data point only	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	Chromium	7440473	0.00012 lb/ton feed	Capacity > 600 tons/day, ESP control only, overall average of several source averages, range is 3.4 x 10E-5 - 0.0002 lb/ton	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	Chromium	7440473	0.022 lb/ton feed	Capacity > 600 tons/day, uncontrolled, one data point only	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	Chromium	7440473	0.00070 lb/ton feed	Capacity > 600 tons/day, spray drying after acid gas and PM control, overall avg. of several source avgs., range is 0.00044 - 0.00096 lb/ton	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Chromium	7440473	0.003 lb/ton feed	Capacity < 600 tons/day, uncontrolled, one data point only,	180

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Chromium	7440473	0.00013 lb/ton feed	Capacity < 400 tons/day, ESP control only, overall average of several source averages, range is 6.4 x 10E-5 - 0.00020 lb/ton	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Chromium	7440473	0.0040 lb/ton feed	Cap. <400 tons/day, spray drying after acid gas and PM control, overall avg. of several source avgs., range is 1.5 x 10E-6 - 0.0080 lb/ton	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Chromium	7440473	3.6 x 10E-6 lb/ton feed	Capacity < 400 tons/day, dry sorbent injection after acid gas and PM control, one data point only	180
Municipal waste combustion	4953	Mass burn waterwall combustor, built before 1980	501001	Chromium	7440473	0.0016 lb/ton feed	ESP control only, overall average of several source averages, range is 0.00058 - 0.0026 lb/ton	180
Municipal waste combustion	4953	Mass burn waterwall combustor, built before 1980	501001	Chromium	7440473	0.016 lb/ton feed	Uncontrolled, overall average of several source averages, range is 0.0034 - 0.030 lb/ton	180
Municipal waste combustion	4953	Mass burn, refractory facility	501001	Chromium	7440473	2.6 x 10E-5 lb/ton feed	Spray drying after acid gas and PM control, one data point only	180
Municipal waste combustion	4953	Mass burn, refractory facility	501001	Chromium	7440473	0.016 lb/ton feed	Uncontrolled, one data point only	180
Municipal waste combustion	4953	Mass burn, refractory facility	501001	Chromium (Cr 6+)	18540299	0.83 lb/ton controlled particulate emis.	Controlled by ESP, based on source tests	118
Municipal waste combustion	4953	Mass burn, water wall incinerator	501001	Chromium (Cr 6+)	18540299	18.952 lb/ton controlled particulate emi	Controlled by ESP, based on source tests	118
Municipal waste combustion	4953	Modular incinerator	501001	Chromium (Cr 6+)	18540299	1.636 lb/ton controlled particulate emis	Controlled by ESP, based on source tests	118
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Chromium (Cr 6+)	18540299	21.824 lb/ton controlled partic. emis.	Controlled by ESP, based on source tests	118
Municipal waste combustion	4953	Incinerator stack	501001	Cobalt	7440484	0.0001 lb/ton munic. solid waste-dry wt	Controlled by spray-baffle scrubber, based on material balance for model incinerator	98
Municipal waste combustion	4953	Incinerator stack	501001	Copper	7440508	0.018 lb/ton munic. solid waste-dry wt.	Controlled by spray-baffle scrubber, based on material balance for model incinerator	98
Municipal waste combustion	4953	Existing mass burn heat recovery facility	501001	Dibenzofuran	132649	1.92 x 10E-6 lb/ton of waste combusted	Controlled by ESP, based on source tests, emissions = 2,3,7,8-TCDD equivalent	118
Municipal waste combustion	4953	Existing mass burn heat recovery facility	501001	Dibenzofuran	132649	1.2 x 10E-7 lb/ton of waste combusted	Dry alk. scrubber & fabric filter contr., assumes 95% contr. effic., emis. = 2,3,7,8-TCDD equiv.	118
Municipal waste combustion	4953	Existing refuse-derived fuel facility	501001	Dibenzofuran	132649	4 x 10E-6 lb/ton of waste combusted	Controlled by ESP, based on source tests, emissions = 2,3,7,8-TCDD equivalent	118

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Municipal waste combustion	4953	Existing refuse-derived fuel facility	501001	Dibenzofuran	132649	2 x 10E-7 lb/ton of waste combusted	Dry alk. scrubber & fabric filter contr., assumes 95% contr. effic., emis. = 2,3,7,8-TCDD equiv.	110
Municipal waste combustion	4953	Mass burn, nonheat recovery facility	501001	Dibenzofuran	132649	4.2 x 10E-6 lb/ton of waste combusted	Controlled by ESP, based on source tests, emissions = 2,3,7,8-TCDD equivalent	110
Municipal waste combustion	4953	Mass burn, nonheat recovery facility	501001	Dibenzofuran	132649	4 x 10E-7 lb/ton of waste combusted	Dry alk. scrubber & fabric filter contr., assumes 95% contr. effic., emis. = 2,3,7,8-TCDD equiv.	110
Municipal waste combustion	4953	Modular incinerator	501001	Dibenzofuran	132649	1.38 x 10E-7 lb/ton of waste combusted	Controlled by ESP, based on source tests, emissions = 2,3,7,8-TCDD equivalent	110
Municipal waste combustion	4953	Modular incinerator	501001	Dibenzofuran	132649	8 x 10E-9 lb/ton of waste combusted	Dry alk. scrubber & fabric filter contr., assumes 95% contr. effic., emis. = 2,3,7,8-TCDD equiv.	110
Municipal waste combustion	4953	Projected or state-of-the-art mass burn heat recovery facility	501001	Dibenzofuran	132649	1.14 x 10E-7 lb/ton of waste combusted	Controlled by ESP, based on source tests, emissions = 2,3,7,8-TCDD equivalent	110
Municipal waste combustion	4953	Projected or state-of-the-art mass burn heat recovery facility	501001	Dibenzofuran	132649	8 x 10E-9 lb/ton of waste combusted	Dry alk. scrubber & fabric filter contr., assumes 95% contr. effic., emis. = 2,3,7,8-TCDD equiv.	110
Municipal waste combustion	4953	Projected or state-of-the-art refuse-derived fuel facility	501001	Dibenzofuran	132649	2.4 x 10E-6 lb/ton of waste combusted	Controlled by ESP, based on source tests, emissions = 2,3,7,8-TCDD equivalent	110
Municipal waste combustion	4953	Projected or state-of-the-art refuse-derived fuel facility	501001	Dibenzofuran	132649	1.6 x 10E-7 lb/ton of waste combusted	Dry alk. scrubber & fabric filter contr., assumes 95% contr. effic., emis. = 2,3,7,8-TCDD equiv.	110
Municipal waste combustion	4953	Existing mass burn heat recovery facility	501001	Formaldehyde	50000	0.0104 lb/ton of waste combusted	Controlled by ESP, based on source tests	110
Municipal waste combustion	4953	Existing mass burn heat recovery facility	501001	Formaldehyde	50000	0.0006 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	110
Municipal waste combustion	4953	Mass burn, nonheat recovery facility	501001	Formaldehyde	50000	0.0104 lb/ton of waste combusted	Controlled by ESP, based on source tests	110
Municipal waste combustion	4953	Mass burn, nonheat recovery facility	501001	Formaldehyde	50000	0.0006 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	110
Municipal waste combustion	4953	Modular incinerator	501001	Formaldehyde	50000	0.0026 lb/ton of waste combusted	Controlled by ESP, based on source tests	110
Municipal waste combustion	4953	Modular incinerator	501001	Formaldehyde	50000	1.6 x 10E-4 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	110

EMISSION FACTORS

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Municipal waste combustion	4953	Projected or state-of-the-art mass burn heat recovery facility	501001	Formaldehyde	50000	0.005 lb/ton of waste combusted	Controlled by ESP, based on source test	118
Municipal waste combustion	4953	Projected or state-of-the-art mass burn heat recovery facility	501001	Formaldehyde	50000	0.0004 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Formaldehyde	50000	0.0022 lb/ton of waste combusted	Controlled by ESP, based on source tests	118
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Formaldehyde	50000	1.4 x 10E-4 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Formaldehyde	50000	1.2 x 10E-6 lb/ton RDF combusted	100% RDF fuel only, ESP control only, overall average of several source averages, range is 8.6 x 10E-7 - 1.6 x 10E-6 lb/ton	180
Municipal waste combustion	4953	Modular starved-air combustor	501001	Formaldehyde	50000	3.0 x 10E-6 lb/ton feed	ESP control only, one data point only	180
Municipal waste combustion	4953	Modular starved-air combustor	501001	Formaldehyde	50000	2.8 x 10E-4 lb/ton feed	Uncontrolled, overall average of several source averages, range is 2.8 x 10E-7 - 9.2 x 10E-6 lb/ton	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	Formaldehyde	50000	0.005 lb/ton wp/Mg feed	Capacity > 400 tons/day, ESP control only, one data point only	180
Municipal waste combustion	4953	Mass burn waterwall combustor, built before 1980	501001	Formaldehyde	50000	1.5 x 10E-9 lb/ton feed	ESP control only, one data point only	180
Municipal waste combustion	4953	Mass burn, water wall incinerator	5	Heptachlorodibenzofurans, total		2.35 - 2540 ng/Nm3 @ 12% CO2	n = 10, 6 locations, controlled with an ESP	118
Municipal waste combustion	4953	Mass burn, water wall incinerator	5	Heptachlorodibenzofurans, total		1.848 x 10E-8 - 1.43 x 10E-5 lb/ton feed	n = 6, 4 locations, controlled with an ESP	118
Municipal waste combustion	4953	Mass burn, water wall incinerator	5	Heptachlorodibenzo-p-dioxins, total		4.43 - 2880 ng/Nm3 @ 12% CO2	n = 10, 6 locations, controlled with an ESP	118
Municipal waste combustion	4953	Mass burn, water wall incinerator	5	Heptachlorodibenzo-p-dioxins, total		3.48 x 10E-8 - 1.464 x 10E-5 lb/ton feed	n = 6, 4 locations, controlled with an ESP	118
Municipal waste combustion	4953	Mass burn, water wall incinerator	5	1,2,3,4,7,8-Hexachlorodibenzofuran		0.67 - 13 ng/Nm3 @ 12% CO2	n = 3, 3 locations, controlled with an ESP	118
Municipal waste combustion	4953	Mass burn, water wall incinerator	5	1,2,3,6,7,8-Hexachlorodibenzofuran		0.27 - 7.8 ng/Nm3 @ 12% CO2	n = 6, 3 locations, controlled with an ESP	118

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Municipal waste combustion	4953	Mass burn, water wall incinerator	5	1,2,3,7,8,9-Hexachlorodibenzofuran		0 - 4.4 ng/Nm3 @ 12% CO2	n = 6, 3 locations, controlled with an ESP	118
Municipal waste combustion	4953	Mass burn, water wall incinerator	5	Hexachlorodibenzofurans, total		1.82 - 3980 ng/Nm3 @ 12% CO2	n = 10, 6 locations, controlled with an ESP	118
Municipal waste combustion	4953	Mass burn, water wall incinerator	5	Hexachlorodibenzofurans, total		1.432 x 10E-8 - 2.02 x 10E-5 lb/ton feed	n = 6, 4 locations, controlled with an ESP	118
Municipal waste combustion	4953	Mass burn, water wall incinerator	5	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	67562857	0.15 - 4.1 ng/Nm3 @ 12% CO2	n = 6, 4 locations, controlled with an ESP	118
Municipal waste combustion	4953	Mass burn, water wall incinerator	5	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	34465468	0.37 - 11 ng/Nm3 @ 12% CO2	n = 6, 4 locations, controlled with an ESP	118
Municipal waste combustion	4953	Mass burn, water wall incinerator	5	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408743	0 - 4.4 ng/Nm3 @ 12% CO2	n = 6, 4 locations, controlled with an ESP	118
Municipal waste combustion	4953	Mass burn, water wall incinerator	5	Hexachlorodibenzo-p-dioxine, total		5.1 - 3190 ng/Nm3 @12% CO2	n = 10, 6 locations, controlled with an ESP	118
Municipal waste combustion	4953	Mass burn, water wall incinerator	5	Hexachlorodibenzo-p-dioxine, total		3.2 x 10E-8 - 1.618 x 10E-5 lb/ton feed	n = 6, 4 locations, controlled with an ESP	118
Municipal waste combustion	4953	Entire process	5	Hydrogen chloride	7647010	0.062-4.88 lbs/ton refuse	Depends on waste content, combustion conditions, control device	133
Municipal waste combustion	4953	Entire process	5	Hydrogen chloride	7647010	1.4 lb/ton refuse	For units which do not recover energy	133
Municipal waste combustion	4953	Entire process	5	Hydrogen chloride	7647010	4 lb/ton refuse	For waste-to-energy facilities	133
Municipal waste combustion	4953	Mass burn, heat recovery facility	501001	Hydrogen chloride	7647010	8.26 lb/ton of waste combusted	No HCl control, based on source tests	118
Municipal waste combustion	4953	Mass burn, heat recovery facility	501001	Hydrogen chloride	7647010	0.8 lb/ton of waste combusted	Controlled by dry alkaline scrubber, assumes 90% HCl control efficiency	118
Municipal waste combustion	4953	Mass burn, nonheat recovery facility	501001	Hydrogen chloride	7647010	8.26 lb/ton of waste combusted	No HCl control, based on source tests	118
Municipal waste combustion	4953	Mass burn, nonheat recovery facility	501001	Hydrogen chloride	7647010	0.8 lb/ton of waste combusted	Controlled by dry alkaline scrubber, assumes 90% HCl control efficiency	118
Municipal waste combustion	4953	Modular incinerator	501061	Hydrogen chloride	7647010	7.14 lb/ton of waste combusted	No HCl control, based on source tests	118
Municipal waste combustion	4953	Modular incinerator	501001	Hydrogen chloride	7647010	0.8 lb/ton of waste combusted	Controlled by dry alkaline scrubber, assumes 90% HCl control efficiency	118

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Hydrogen chloride	7647010	5.14 lb/ton of waste combusted	No HCl control, based on source tests	118
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Hydrogen chloride	7647010	0.6 lb/ton of waste combusted	Controlled by dry alkaline scrubber, assumes 90% HCl control efficiency	118
Municipal waste combustion	4953	Incinerator	501001	Hydrogen chloride	7647010	5.0 lbs/ton material burned		181
Municipal waste combustion	4953	Incinerator	503001	Hydrogen chloride	7647010	5.35 lbs/ton material burned		181
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Hydrogen chloride	7647010	4.6 lb/ton RDF combusted	100% RDF fuel only, ESP control only, overall average of several source averages, range is 3.4 - 5.2 lb/ton	180
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Hydrogen chloride	7647010	10.4 lb/ton RDF combusted	100% RDF only, uncontrolled, overall average of several source averages, range is 4.8 - 15.8 lb/ton	180
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Hydrogen chloride	7647010	0.048 lb/ton RDF combusted	Spray drying after acid gas and PM control, one data point only, 100% RDF fuel only	180
Municipal waste combustion	4953	Modular starved-air combustor	501001	Hydrogen chloride	7647010	9.2 lb/ton feed	ESP control only, overall average of several source averages, range is 5.2 - 16.6 lb/ton	180
Municipal waste combustion	4953	Modular starved-air combustor	501001	Hydrogen chloride	7647010	6.2 lb/ton feed	Uncontrolled, overall average of several source averages, range is 1.86 - 8.8 lb/ton	180
Municipal waste combustion	4953	Modular excess-air combustor	501001	Hydrogen chloride	7647010	4.2 lb/ton feed	Uncontrolled, overall average of several source averages, range is 0.70 - 9.2 lb/ton	180
Municipal waste combustion	4953	Modular excess-air combustor	501001	Hydrogen chloride	7647010	6.8 lb/ton feed	ESP control only, overall average of several source averages, range is 3.8 - 9.2 lb/ton	180
Municipal waste combustion	4953	Modular excess-air combustor	501001	Hydrogen chloride	7647010	0.006 lb/ton feed	Dry sorbent injection after acid gas and PM control, one data point only	180
Municipal waste combustion	4953	Mass burn, water wall incinerator	501001	Hydrogen chloride	7647010	6.4 lb/ton feed	ESP control only, one data point only	180
Municipal waste combustion	4953	Mass burn, water wall incinerator	501001	Hydrogen chloride	7647010	5.2 lb/ton feed	Uncontrolled, one data point only	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	Hydrogen chloride	7647010	5.8 lb/ton feed	Capacity > 600 tons/day, ESP control only, overall average of several source averages, range is 1.92 - 9.4 lb/ton	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	Hydrogen chloride	7647010	8.4 lb/ton feed	Capacity > 600 tons/day, uncontrolled, overall average of several source averages, range is 6.6 - 11 lb/ton	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	Hydrogen chloride	7647010	0.22 lb/ton feed	Capacity > 600 tons/day, spray drying after acid gas and PM control, overall avg. of several source avgs., range is 0.084 - 0.34 lb/ton	180

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Hydrogen chloride	7647010	9.0 lb/ton feed	Capacity < 400 tons/day, uncontrolled, overall average of several source averages, range is 6.2 - 11.8 lb/ton	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Hydrogen chloride	7647010	6.8 lb/ton feed	Capacity < 400 tons/day, ESP control only, overall average of several source averages, range is 4.8 - 9.0 lb/ton	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Hydrogen chloride	7647010	0.42 lb/ton feed	Capacity < 400 tons/day, spray drying after acid gas and PM control, overall avg. of several source avgs., range is 0.138 - 0.96 lb/ton	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Hydrogen chloride	7647010	1.12 lb/ton feed	Cap. < 400 tons/day, dry sorbent injection after acid gas and PM control, overall avg. of several source avgs., range is 0.34 - 2.2 lb/ton	180
Municipal waste combustion	4953	Mass burn waterwall combustor, built before 1980	501001	Hydrogen chloride	7647010	13 lb/ton feed	Uncontrolled, one data point only	180
Municipal waste combustion	4953	Mass burn waterwall combustor, built before 1980	501001	Hydrogen chloride	7647010	3.0 lb/ton feed	ESP control only, overall average of several source averages, range is 2.2 - 3.8 lb/ton	180
Municipal waste combustion	4953	Mass burn waterwall combustor, built before 1980	501001	Hydrogen chloride	7647010	3.4 lb/ton feed	Dry sorbent injection after acid gas and PM control, one data point only	180
Municipal waste combustion	4953	Mass burn, refractory facility	501001	Hydrogen chloride	7647010	0.062 lb/ton feed	Spray drying after acid gas and PM control, one data point only	180
Municipal waste combustion	4953	Mass burn, refractory facility	501001	Hydrogen chloride	7647010	3.8 lb/ton feed	ESP control only, overall average of several source averages	180
Municipal waste combustion	4953	Mass burn, refractory facility	501001	Hydrogen chloride	7647010	1.26 - 4.2 lb/ton feed	ESP control only, overall range of several source averages	180
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Hydrogen fluoride	7664393	0.014 lb/ton RDF combusted	100% RDF fuel only, ESP control only, one data point only	180
Municipal waste combustion	4953	Modular starved-air combustor	501001	Hydrogen fluoride	7664393	0.008 - 0.098 lb/ton feed	Uncontrolled, overall range of several source averages	180
Municipal waste combustion	4953	Modular starved-air combustor	501001	Hydrogen fluoride	7664393	0.068 lb/ton feed	Uncontrolled, overall average of several source averages	180
Municipal waste combustion	4953	Modular excess-air combustor	501001	Hydrogen fluoride	7664393	0.0016 lb/ton feed	Uncontrolled, one data point only	180
Municipal waste combustion	4953	Mass burn, water wall incinerator	501001	Hydrogen fluoride	7664393	0.032 lb/ton feed	Uncontrolled, one data point only	180

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	Hydrogen fluoride	7664393	0.076 lb/ton feed	Capacity > 600 tons/day, ESP control only, overall average of several source averages	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	Hydrogen fluoride	7664393	0.048 - 0.110 lb/ton feed	Capacity > 600 tons/day, ESP control only, overall range of several source averages	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	Hydrogen fluoride	7664393	0.0094 lb/ton feed	Capacity > 600 tons/day, spray drying after acid gas and PM control, overall average of several source averages	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	Hydrogen fluoride	7664393	0.0078 - 0.011 lb/ton feed	Capacity > 600 tons/day, spray drying after acid gas and PM control, overall range of several source averages	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Hydrogen fluoride	7664393	0.044 - 0.048 lb/ton feed	Capacity < 600 tons/day, ESP control only, overall range of several source averages	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Hydrogen fluoride	7664393	0.046 lb/ton feed	Capacity < 600 tons/day, ESP control only, overall average of several source averages	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Hydrogen fluoride	7664393	0.00032 - 0.0038 lb/ton feed	Capacity < 600 tons/day, spray drying after acid gas and PM control, overall range of several source averages	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Hydrogen fluoride	7664393	0.002 lb/ton feed	Capacity < 600 tons/day, spray drying after acid gas and PM control, overall average of several source averages	180
Municipal waste combustion	4953	Mass burn waterwall combustor, built before 1980	501001	Hydrogen fluoride	766439	0.010 lb/ton feed	ESP control only, one data point only	180
Municipal waste combustion	4953	Mass burn waterwall combustor, built before 1980	501001	Hydrogen fluoride	7664393	0.018 lb/ton feed	Uncontrolled, one data point only	180
Municipal waste combustion	4953	Mass burn, refractory facility	501001	Hydrogen fluoride	7664393	0.003 lb/ton feed	Spray drying after acid gas and PM control, one data point only	180
Municipal waste combustion	4953	Mass burn, refractory facility	501001	Hydrogen fluoride	7664393	0.082 lb/ton feed	ESP control only, overall average of several source averages	180
Municipal waste combustion	4953	Mass burn, refractory facility	501001	Hydrogen fluoride	7664393	0.046 - 0.114 lb/ton feed	ESP control only, overall range of several source averages	180
Municipal waste combustion	4953	Mass burn, refractory facility	501001	Hydrogen fluoride	7664393	0.005 lb/ton feed	Uncontrolled, one data point only	180

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Municipal waste combustion	4953	Incinerator stack	501001	Manganese	7439965	0.014 lb/ton munic. solid waste-dry wt.	Controlled by spray-baffle scrubber, based on material balance for model incinerator	98
Municipal waste combustion	4953	Stack	501001	Manganese	7439965	0.05 lb/ton of waste incinerated	Uncontrolled, based on emission tests	107
Municipal waste combustion	4953	Stack	501001	Manganese	7439965	0.01 lb/ton of waste incinerated	Controlled by electrostatic precipitator, based on emission tests	107
Municipal waste combustion	4953	Incinerator stack	501001	Mercury	7439976	0.002 lb/ton munic. solid waste-dry wt.	Controlled by spray-baffle scrubber, calculated based on engineering judgement	98
Municipal waste combustion	4953	Mass burn facility	501001	Mercury	7439976	0.0034 lb/ton charged material	Uncontrolled	40
Municipal waste combustion	4953	Mass burn, refractory facility	501001	Mercury	7439976	13.54 lb/ton controlled particulate emissions	Controlled by ESP, based on source test	118
Municipal waste combustion	4953	Mass burn, refractory facility	501001	Mercury	7439976	9.6 lb/ton controlled particulate emissions	Controlled by fabric filter, assumes 80% Hg control efficiency	118
Municipal waste combustion	4953	Mass burn, water wall incinerator	501001	Mercury	7439976	16.326 lb/ton controlled particulate emissions	Controlled by ESP, based on source tests	118
Municipal waste combustion	4953	Mass burn, water wall incinerator	501001	Mercury	7439976	11.6 lb/ton controlled particulate emissions	Controlled by fabric filter, assumes 80% Hg control efficiency	118
Municipal waste combustion	4953	Modular incinerator	501001	Mercury	7439976	4.68 lb/ton controlled particulate emissions	Controlled by ESP, based on source tests	118
Municipal waste combustion	4953	Modular incinerator	501001	Mercury	7439976	3.4 lb/ton controlled particulate emissions	Controlled by fabric filter, assumes 80% Hg control efficiency	118
Municipal waste combustion	4953	Modular incinerator	501001	Mercury	7439976	0.005 lb/ton charged material	Uncontrolled	40
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Mercury	7439976	1.736 lb/ton controlled particulate emissions	Controlled by ESP, based on source tests	118
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Mercury	7439976	1.24 lb/ton controlled particulate emissions	Controlled by fabric filter, assumes 80% Hg control efficiency	118
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Mercury	7439976	0.0022 lb/ton charged material	Uncontrolled	40
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Mercury	7439976	0.0028 lb/ton RDF combusted	100% RDF fuel only, ESP control only, overall average of serveral source averages, range is 0.00092 - 0.042 lb/ton	180
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Mercury	7439976	0.0046 lb/ton RDF combusted	100% RDF only, uncontrolled, overall average of serveral source averages, range is 0.0022 - 0.0092 lb/ton	180

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Mercury	7439976	0.00082 lb/ton RDF combusted	Spray drying after acid gas and PM control, overall avg. of several source avgs., 100% RDF fuel only, range is 3.2 x 10E-5 - 0.00104 lb/ton	180
Municipal waste combustion	4953	Modular starved-air combuster	501001	Mercury	7439976	0.0082 lb/ton feed	ESP control only, overall average of several source averages, range is 0.0052 - 0.0112 lb/ton	180
Municipal waste combustion	4953	Modular starved-air combuster	501001	Mercury	7439976	0.0048 lb/ton feed	Uncontrolled, overall average of several source averages, range is 0.00112 - 0.0072 lb/ton	180
Municipal waste combustion	4953	Modular excess-air combuster	501001	Mercury	7439976	0.0015 lb/ton feed	ESP control only, overall average of several source averages, range is 0.00092 - 0.0020 lb/ton	180
Municipal waste combustion	4953	Modular excess-air combuster	501001	Mercury	7439976	2 x 10E-9 lb/ton feed	Dry sorbent injection after acid gas and PM control, one data point only	180
Municipal waste combustion	4953	Mass burn, water wall incinerator	501001	Mercury	7439976	0.0017[illegible] lb/ton feed	Uncontrolled, one data point only	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combuster built after 1980	501001	Mercury	7439976	0.0044 lb/ton feed	Capacity > 400 tons/day, ESP control only, one data point only	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combuster built after 1980	501001	Mercury	7439976	0.0070 lb/ton feed	Capacity > 400 tons/day, spray drying after acid gas and PM control, overall avg. of several source avgs., range is 0.0052 - 0.0088 lb/ton	180
Municipal waste combustion	4953	Mass burn waterwall combuster, small size new model to any age medium	501001	Mercury	7439976	0.0028 lb/ton feed	Capacity < 400 tons/day, uncontrolled, one data point only	180
Municipal waste combustion	4953	Mass burn waterwall combuster, small size new model to any age medium	501001	Mercury	7439976	0.0044 lb/ton feed	Capacity < 400 tons/day, ESP control only, overall avg. of several source averages, range is 0.0034 - 0.0086 lb/ton	180
Municipal waste combustion	4953	Mass burn waterwall combuster, small size new model to any age medium	501001	Mercury	7439976	0.0026 lb/ton feed	Capacity < 400 tons/day, spray drying after acid gas and PM control, overall avg. of several source avgs., range is 0.0022 - 0.0028 lb/ton	180
Municipal waste combustion	4953	Mass burn waterwall combuster, built before 1980	501001	Mercury	7439976	0.0014 lb/ton feed	Uncontrolled, overall average of several source averages, range is 0.00017 - 0.036 lb/ton	180
Municipal waste combustion	4953	Mass burn waterwall combuster, built before 1980	501001	Mercury	7439976	0.0022 lb/ton feed	Dry sorbent injection after acid gas and PM control, one data point only	180
Municipal waste combustion	4953	Mass burn waterwall combuster, built before 1980	501001	Mercury	7439976	0.0104 lb/ton feed	ESP control only, overall average of several source averages, range is 0.00022 - 0.0214 lb/ton	180

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Municipal waste combustion	4953	Mass burn, refractory facility	501001	Mercury	7439976	0.0015 lb/ton feed	Spray drying after acid gas and PM control, one data point only	180
Municipal waste combustion	4953	Mass burn, refractory facility	501001	Mercury	7439976	0.0112 lb/ton feed	ESP control only, overall average of several source averages, range is 0.0086 - 0.0134 lb/ton	180
Municipal waste combustion	4953	Mass burn, refractory facility	501001	Mercury	7439976	0.012 lb/ton feed	Uncontrolled, one data point only	180
Municipal waste combustion	4953	Incinerator burning refuse and sludge	501001	Nickel	7440020	0.005 lb/ton of solid waste incinerated	Controlled by wet scrubber, calculated based on source test	110
Municipal waste combustion	4953	Incinerator burning refuse only	501001	Nickel	7440020	0.003 lb/ton of solid waste incinerated	Controlled by wet scrubber, calculated based on source tests	110
Municipal waste combustion	4953	Incinerator stack	501001	Nickel	7440020	0.002 lb/ton munic. solid waste-dry wt.	Controlled by spray-baffle scrubber, based on material balance for model incinerator	98
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Nickel	7440020	0.0122 lb/ton RDF combusted	100% RDF fuel only, ESP control only, overall average of several source averages, range is 0.00044 - 0.034 lb/ton	180
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Nickel	7440020	0.0056 lb/ton RDF combusted	100% RDF fuel only, uncontrolled, one data point only	180
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Nickel	7440020	0.0052 lb/ton RDF combusted	Spray drying after acid gas and PM control, one data point only, 100% RDF fuel only	180
Municipal waste combustion	4953	Modular starved-air combustor	501001	Nickel	7440020	0.00022 lb/ton feed	ESP control only, overall average of several source averages, range is 1.7 x 10E-5 - 0.00044 lb/ton	180
Municipal waste combustion	4953	Modular starved-air combustor	501001	Nickel	7440020	0.0030 lb/ton feed	Uncontrolled, overall average of several source averages, range is 6.2 x 10E-5 - 0.0078 lb/ton	180
Municipal waste combustion	4953	Modular excess-air combustor	501001	Nickel	7440020	0.0050 lb/ton feed	ESP control only, one data point only	180
Municipal waste combustion	4953	Modular excess-air combustor	501001	Nickel	7440020	2 x 10E-9 lb/ton feed	Dry sorbent injection after acid gas and PM control, one data point only	180
Municipal waste combustion	4953	Mass burn, water wall incinerator	501001	Nickel	7440020	0.00034 lb/ton feed	Uncontrolled, one data point only	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	Nickel	7440020	1.88 x 10E-5 lb/ton feed	Capacity > 400 tons/day, ESP control only, one data point only	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	Nickel	7440020	0.00017 lb/ton feed	Capacity > 400 tons/day, spray drying after acid gas and PM control, overall avg. of several source avgs., range is 0.00013 - 0.00022 lb/ton	180

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Nickel	7440020	9.4 x 10E-8 lb/ton feed	Capacity < 400 tons/day, uncontrolled, one data point only	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Nickel	7440020	6.8 x 10E-8 lb/ton feed	Capacity < 400 tons/day, ESP control only, overall average of several source averages, range is 4.4 x 10E-8 - 8.0 x 10E-8 lb/ton	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Nickel	7440020	0.00192 lb/ton feed	Cap. < 400 tons/day, spray drying after acid gas and PM control, overall avg. of several source avgs., range is 2.8 x 10E-8 - 0.0038 lb/ton	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Nickel	7440020	1.4 x 10E-6 lb/ton feed	Capacity < 400 tons/day, dry sorbent injection after acid gas and PM control, one data point only	180
Municipal waste combustion	4953	Mass burn waterwall combustor, built before 1980	501001	Nickel	7440020	2,200 lb/ton feed	ESP control only, one data point only	180
Municipal waste combustion	4953	Mass burn waterwall combustor, built before 1980	501001	Nickel	7440020	0.020 lb/ton feed	Uncontrolled, one data point only	180
Municipal waste combustion	4953	Mass burn, refractory facility	501001	Nickel	7440020	0.0015 lb/ton feed	Spray drying after acid gas and PM control, one data point only	180
Municipal waste combustion	4953	Mass burn, refractory facility	501001	Nickel	7440020	0.014 lb/ton feed	Uncontrolled, one data point only	180
Municipal waste combustion	4953	Mass burn, water wall incinerator	5	Octachlorodibenzofurans, total		0.704 - 197 ng/Nm3 @ 12% CO2	n = 10, 4 locations, controlled with an ESP	118
Municipal waste combustion	4953	Mass burn, water wall incinerator	5	Octachlorodibenzofurans, total		3.2 x 10E-9 - 1.072 x 10E-6 lb/ton feed	n = 6, 4 locations, controlled with an ESP	118
Municipal waste combustion	4953	Mass burn, water wall incinerator	5	Octachlorodibenzo-p-dioxine, total		3.39 - 509 ng/m3 @ 12% CO2	n = 10, 4 locations, controlled with an ESP	118
Municipal waste combustion	4953	Mass burn, water wall incinerator	5	Octachlorodibenzo-p-dioxine, total		2.56 x 10E-8 - 3.86 x 10E-6 lb/ton feed	n = 6, 4 locations, controlled with an ESP	118
Municipal waste combustion	4953	Mass burn, water wall incinerator	5	1,2,3,7,8-Pentachlorodibenzofuran		0.56 - 11 ng/Nm3 @ 12% CO2	n = 6, 4 locations, controlled with an ESP	118
Municipal waste combustion	4953	Mass burn, water wall incinerator	5	2,3,4,7,8-Pentachlorodibenzofuran	57117314	1.16 - 10.4 ng/Nm3 @ 12% CO2	n = 6, 4 locations, controlled with an ESP	118
Municipal waste combustion	4953	Mass burn	5	Pentachlorodibenzofurans, total		0.423 - 15,000 ng/Nm3 @ 12% CO2	Developed from test data, w/ various controls - ESP or water spray humidifier/dry sorbent injection	117

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Municipal waste combustion	4953	Mass burn, water wall incinerator	S	Pentachlorodibenzofurans, total		33.2 - 8770 ng/Nm3 @ 12% CO2	n = 9, 8 locations, controlled with an ESP	118
Municipal waste combustion	4953	Mass burn, water wall incinerator	S	Pentachlorodibenzofurans, total		2.63 x 10E-8 - 9.62 x 10E-8 lb/ton feed	n = 8, 3 locations, controlled with an ESP	118
Municipal waste combustion	4953	Modular incinerator	S	Pentachlorodibenzofurans, total		97 - 1810 ng/Nm3 @ 12% CO2	Developed from test data, all uncontrolled	117
Municipal waste combustion	4953	Refuse derived fuel incinerator	S	Pentachlorodibenzofurans, total		135 - 9100 ng/Nm3 @ 12% CO2	Developed from test data, most ESP controlled, one with ESP/cyclone	117
Municipal waste combustion	4953	Mass burn, water wall incinerator	S	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321764	0.19 - 3.8 ng/Nm3 @ 12% CO2	n = 6, 4 locations, controlled with an ESP	118
Municipal waste combustion	4953	Mass burn	S	Pentachlorodibenzo-p-dioxins, total		1.1 - 11,000 ng/Nm3 @ 12% CO2	Developed from test data, w/ various controls - ESP or water spray humidifier/dry sorbent injection	117
Municipal waste combustion	4953	Mass burn, water wall incinerator	S	Pentachlorodibenzo-p-dioxins, total		2.99 - 2700 ng/Nm3 @ 12% CO2	n = 9, 4 locations, controlled with an ESP	118
Municipal waste combustion	4953	Mass burn, water wall incinerator	S	Pentachlorodibenzo-p-dioxins, total		2.34 x 10E-8 - 1.36 x 10E-5 lb/ton feed	n = 5, 3 locations, controlled with an ESP	118
Municipal waste combustion	4953	Modular incinerator	S	Pentachlorodibenzo-p-dioxins, total		43 - 1540 ng/Nm3 @ 12% CO2	Developed from test data, all uncontrolled	117
Municipal waste combustion	4953	Refuse derived fuel incinerator	S	Pentachlorodibenzo-p-dioxins, total		54 - 2480 ng/Nm3 @ 12% CO2	Developed from test data, most ESP controlled, one with ESP/cyclone	117
Municipal waste combustion	4953	Existing mass burn heat recovery facility	S01001	Polychlorinated biphenyls (PCBs)	1336363	4.2 x 10E-6 lb/ton of waste combusted	Controlled by ESP, based on source test data	118
Municipal waste combustion	4953	Existing mass burn heat recovery facility	S01001	Polychlorinated biphenyls (PCBs)	1336363	2 x 10E-7 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Municipal waste combustion	4953	Mass burn, nonheat recovery facility	S01001	Polychlorinated biphenyls (PCBs)	1336363	4.2 x 10E-6 lb/ton of waste combusted	Controlled by ESP, based on source test data	118
Municipal waste combustion	4953	Mass burn, nonheat recovery facility	S01001	Polychlorinated biphenyls (PCBs)	1336363	2 x 10E-7 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Municipal waste combustion	4953	Modular fuel facility	S01001	Polychlorinated biphenyls (PCBs)	1336363	9.0 x 10-6 lb/ton of waste combusted	Controlled by ESP, based on source test data	118
Municipal waste combustion	4953	Modular incinerator	S01001	Polychlorinated biphenyls (PCBs)	1336363	6 x 10E-7 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Municipal waste combustion	4953	Projected or state-of-the-art mass burn heat recovery facility	S01001	Polychlorinated biphenyls (PCBs)	1336363	4.2 x 10E-7 lb/ton of waste combusted	Controlled by ESP, based on source test data	118

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Municipal waste combustion	4953	Projected or state-of-the-art mass burn heat recovery facility	501001	Polychlorinated biphenyls (PCBs)	1336363	2 x 10E-8 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Polychlorinated biphenyls (PCBs)	1336363	0.0028 lb/ton of waste combusted	Controlled by ESP, based on source test data	118
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Polychlorinated biphenyls (PCBs)	1336363	1.8 x 10E-4 lb/ton of waste combusted	Controlled by dry alkaline scrubber & fabric filter, assumes 95% control efficiency	118
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Polychlorinated biphenyls (PCBs)	1336363	2.6 x 10E-6 lb/ton RDF combusted	100% RDF fuel only, ESP control only, one data point only	180
Municipal waste combustion	4953	Modular starved-air combustor	501001	Polychlorinated biphenyls (PCBs)	1336363	5.0 x 10E-6 lb/ton feed	Uncontrolled, overall average of several source averages, range is 5.0 x 10E-7 - 1.14 x 10E-5 lb/ton	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	Polychlorinated biphenyls (PCBs)	1336363	2.6 x 10E-5 lb/ton feed	Capacity > 600 tons/day, ESP control only, one data point only, detection limit reported	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	Polychlorinated biphenyls (PCBs)	1336363	2.6 x 10E-5 lb/ton feed	Capacity > 600 tons/day, uncontrolled, one data point only, detection limit reported	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Polychlorinated biphenyls (PCBs)	1336363	3.8 x 10E-5 lb/ton feed	Capacity < 600 tons/day, ESP control only, overall average of several source averages, range is 1.76 x 10E-5 - 6.8 x 10E-5 lb/ton	180
Municipal waste combustion	4953	Mass burn waterwall combustor, built before 1980	501001	Polychlorinated biphenyls (PCBs)	1336363	5.4 x 10E-6 lb/ton feed	ESP control only, overall average of several source averages, range is 4.2 x 10E-7 - 1.0 x 10E-5 lb/ton	180
Municipal waste combustion	4953	ESP catch - fly ash	5	Polychlorinated dibenzofurans, total		Not detectable - 4.072 x 10E-3 lb/ton	Appr. 40 sites tested, homologue data given in refer., isomer data may be avail. from indiv. refer.	116
Municipal waste combustion	4953	Flue gas from stack - fly ash	5	Polychlorinated dibenzofurans, total		460.1 - 1212 ng/m3	Four sites tested, homologue data given in refer., isomer data may be avail. from indiv. references	116
Municipal waste combustion	4953	Stack - fly ash	5	Polychlorinated dibenzofurans, total		1322 ng/m3	One site tested, homologue data given in refer., isomer data may be avail. from indiv. references	116
Municipal waste combustion	4953	Stack - fly ash	5	Polychlorinated dibenzofurans, total		1.7 x 10E-4 lb/ton	One site tested, homologue data given in refer., isomer data may be avail. from indiv. references	116
Municipal waste combustion	4953	ESP catch - fly ash	5	Polychlorinated dibenzo-p-dioxins, total		Not detectable - 5.992 x 10-3 lb/ton	Appr. 40 sites tested, homologue data given in refer., isomer data may be avail. from indiv. refer.	116
Municipal waste combustion	4953	Existing mass burn heat recovery facility	501001	Polychlorinated dibenzo-p-dioxins, total		1.92 x 10E-6 lb/ton of waste combusted	Controlled by ESP, based on source tests, emissions = 2,3,7,8-TCDD equivalent	118

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Municipal waste combustion	4953	Existing mass burn heat recovery facility	501001	Polychlorinated dibenzo-p-dioxins, total		1.2 x 10E-7 lb/ton of waste combusted	Dry alk. scrubber & fabric filter contr., assumes 95% contr. effic., emis. = 2,3,7,8-TCDD equiv.	118
Municipal waste combustion	4953	Existing refuse-derived fuel facility	501001	Polychlorinated dibenzo-p-dioxins, total		4 x 10E-6 lb/ton of waste combusted	Controlled by ESP, based on source tests, emissions = 2,3,7,8-TCDD equivalent	118
Municipal waste combustion	4953	Existing refuse-derived fuel facility	501001	Polychlorinated dibenzo-p-dioxins, total		2 x 10E-7 lb/ton of waste combusted	Dry alk. scrubber & fabric filter contr., assumes 95% contr. effic., emis. = 2,3,7,8-TCDD equiv.	118
Municipal waste combustion	4953	Flue gas from stack - fly ash	5	Polychlorinated dibenzo-p-dioxins, total		45.4 - 906 ng/m3	Four sites tested, homologue data given in refer., isomer data may be avail. from indiv. references	116
Municipal waste combustion	4953	Mass burn, nonheat recovery facility	501001	Polychlorinated dibenzo-p-dioxins, total		6.2 x 10E-6 lb/ton of waste combusted	Controlled by ESP, based on source tests, emissions = 2,3,7,8-TCDD equivalent	118
Municipal waste combustion	4953	Mass burn, nonheat recovery facility	501001	Polychlorinated dibenzo-p-dioxins, total		4 x 10E-7 lb/ton of waste combusted	Dry alk. scrubber & fabric filter contr., assumes 95% contr. effic., emis. = 2,3,7,8-TCDD equiv.	118
Municipal waste combustion	4953	Modular incinerator	501001	Polychlorinated dibenzo-p-dioxins, total		1.38 x 10E-7 lb/ton of waste combusted	Controlled by ESP, based on source tests, emissions = 2,3,7,8-TCDD equivalent	118
Municipal waste combustion	4953	Modular incinerator	501001	Polychlorinated dibenzo-p-dioxins, total		8 x 10E-9 lb/ton of waste combusted	Dry alk. scrubber & fabric filter contr., assumes 95% contr. effic., emis. = 2,3,7,8-TCDD equiv.	118
Municipal waste combustion	4953	Projected or state-of-the-art mass burn heat recovery facility	501001	Polychlorinated dibenzo-p-dioxins, total		1.16 x 10E-7 lb/ton of waste combusted	Controlled by ESP, based on source tests, emissions = 2,3,7,8-TCDD equivalent	118
Municipal waste combustion	4953	Projected or state-of-the-art mass burn heat recovery facility	501001	Polychlorinated dibenzo-p-dioxins, total		8 x 10E-9 lb/ton of waste combusted	Dry alk. scrubber & fabric filter contr., assumes 95% contr. effic., emis. = 2,3,7,8-TCDD equiv.	118
Municipal waste combustion	4953	Projected or state-of-the-art refuse-derived fuel facility	501001	Polychlorinated dibenzo-p-dioxins, total		2.4 x 10E-6 lb/ton of waste combusted	Controlled by ESP, based on source tests, emissions = 2,3,7,8-TCDD equivalent	118
Municipal waste combustion	4953	Projected or state-of-the-art refuse-derived fuel facility	501001	Polychlorinated dibenzo-p-dioxins, total		1.6 x 10-7 lb/ton of waste combusted	Dry alk. scrubber & fabric filter contr., assumes 95% contr. effic., emis. = 2,3,7,8-TCDD equiv.	118
Municipal waste combustion	4953	Stack - fly ash	5	Polychlorinated dibenzo-p-dioxins, total		1540 ng/m3	One site tested, homologue data given in refer., isomer data may be avail. from indiv. references	116
Municipal waste combustion	4953	Stack - fly ash	5	Polychlorinated dibenzo-p-dioxins, total		4.4 x 10E-4 lb/ton	One site tested, homologue data given in refer., isomer data may be avail. from indiv. references	116
Municipal waste combustion	4953	Multiple chamber reciprocating stoker grate incinerator	50100101	Polycyclic organic matter		6.26 x 10E-4 lb/ton waste burned	Uncontrolled, represents primarily particulate POM	114

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INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Municipal waste combustion	4953	Multiple chamber, reciprocating stoker grate	50100101	Polycyclic organic matter		3.24 x 10E-5 lb/ton waste burned	Wet scrubber, represents particulate POM	114
Municipal waste combustion	4953	Multiple chamber, reciprocating stoker grate	50100101	Polycyclic organic matter		8.8 x 10E-6 lb/ton waste burned	ESP, represents particulate POM	114
Municipal waste combustion	4953	Multiple chamber, reciprocating stoker grate	50100101	Polycyclic organic matter		0.0126 lb/ton waste burned	ESP, represents both gaseous and particulate POM	114
Municipal waste combustion	4953	Multiple chamber, traveling grate incinerator	50100101	Polycyclic organic matter		8.08 x 10E-5 lb/ton waste burned	Settling chamber is control device, represents primarily particulate POM	114
Municipal waste combustion	4953	Rocking bar grate	50100101	Polycyclic organic matter		3.44 x 10E-5 lb/ton waste burned	Wet scrubber and ESP, represents both gaseous and particulate POM	114
Municipal waste combustion	4953	Mass burn unit	501001	Selenium	7782492	4 x 10E-4 lb/ton feed	Calculated from three tests, average of range, uncontrolled, likely to exclude Se in vapor phase	21
Municipal waste combustion	4953	Mass burn unit	501001	Selenium	7782492	6 x 10E-5 lb/ton feed	Calculated from three tests, average of range, ESP, likely to exclude Se in vapor phase	21
Municipal waste combustion	4953	RDF unit	501001	Selenium	7782492	4 x 10E-4 lb/ton refuse	Calculated from max value of three tests, controlled with wet scrubber	19
Municipal waste combustion	4953	Incinerator stack	501001	Silver	7440224	0.002 lb/ton munic. solid waste-dry wt.	Controlled by spray-baffle scrubber, based on material balance for model incinerator	98
Municipal waste combustion	4953	Modular excess-air combustor	501001	Sulfur trioxide	7446119	4.4 lb/ton feed	Uncontrolled, one data point only	180
Municipal waste combustion	4953	Modular excess-air combustor	501001	Sulfur trioxide	7446119	0.72 lb/ton feed	ESP control only, overall average of several source averages, range is 0.70 - 0.74 lb/ton	180
Municipal waste combustion	4953	Mass burn, water wall incinerator	501001	Sulfur trioxide	7446119	2.0 lb/ton feed	Uncontrolled, one data point only	180
Municipal waste combustion	4953	Mass burn, water wall incinerator	501001	Sulfur trioxide	7446119	1.44 lb/ton feed	ESP control only, one data point only	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	Sulfur trioxide	7446119	0.136 lb/ton feed	Capacity > 600 tons/day, spray drying after acid gas and PM control, overall average of several source avgs., range is 0.120 - 0.130 lb/ton	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Sulfur trioxide	7446119	2.4 lb/ton feed	Capacity < 600 tons/day, uncontrolled, one data point only	180

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Sulfur trioxide	7446119	0.126 lb/ton feed	Capacity < 600 tons/day, ESP control only, overall average of several source averages, range is 0.078 - 0.172 lb/ton	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Sulfur trioxide	7446119	0.96 lb/ton feed	Capacity < 600 tons/day, spray drying after acid gas and PM control, one data point only	180
Municipal waste combustion	4953	Mass burn waterwall combustor, built before 1980	501001	Sulfur trioxide	7446119	0.148 lb/ton feed	Uncontrolled, one data point only	180
Municipal waste combustion	4953	ESP catch - fly ash	5	2,3,7,8-Tetrachlorodibenzofuran		Not detectable - 6 x 10E-4 lb/ton	Appr. 40 sites tested, homologue data given in refer., lesser data may be avail. from indiv. refer.	116
Municipal waste combustion	4953	Flue gas from stack - fly ash	5	2,3,7,8-Tetrachlorodibenzofuran		Not detectable - 10.3 ng/m3	Four sites tested, homologue data given in refer., lesser data may be avail. from indiv. references	116
Municipal waste combustion	4953	Mass burn, water wall incinerator	5	2,3,7,8-Tetrachlorodibenzofuran		0.96 - 448 ng/Nm3 @ 12% CO2	n = 8, 5 locations, controlled with an ESP	118
Municipal waste combustion	4953	Mass burn, water wall incinerator	5	2,3,7,8-Tetrachlorodibenzofuran		1.79 x 10E-8 - 2.36 x 10E-6 lb/ton feed	n = 4, 3 locations, controlled with an ESP	118
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	2,3,7,8-Tetrachlorodibenzofuran		7.8 x 10E-8 lb/ton RDF combusted	100% RDF fuel only, ESP control only, overall average of several source averages, range is 8.8 x 10E-9 - 2.6 x 10E-7 lb/ton	180
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	2,3,7,8-Tetrachlorodibenzofuran		1.42 x 10E-7 lb/ton RDF combusted	100% RDF fuel only, uncontrolled, overall average of several source averages, range is 1.4 x 10E-7 - 1.82 x 10E-7 lb/ton	180
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	2,3,7,8-Tetrachlorodibenzofuran		4.8 x 10E-10 lb/ton RDF combusted	Spray drying after acid gas and PM control, 100% RDF fuel only, range is 1.1 x 10E-10 - 8.4 x 10E-10 lb/ton	180
Municipal waste combustion	4953	Modular starved-air combustor	501001	2,3,7,8-Tetrachlorodibenzofuran		2.6 x 10E-6 lb/ton feed	ESP control only, overall average of several source averages, range is 6.8 x 10E-9 - 5.0 x 10E-6 lb/ton	180
Municipal waste combustion	4953	Modular starved-air combustor	501001	2,3,7,8-Tetrachlorodibenzofuran		2.9 x 10E-8 lb/ton feed	Uncontrolled, one data point only	180
Municipal waste combustion	4953	Modular excess-air combustor	501001	2,3,7,8-Tetrachlorodibenzofuran		3.8 x 10E-8 lb/ton feed	ESP control only, overall average of several source averages, range is 8.8 x 10E-9 - 6.6 x 10E-8 lb/ton	180
Municipal waste combustion	4953	Modular excess-air combustor	501001	2,3,7,8-Tetrachlorodibenzofuran		3.4 x 10E-10 lb/ton feed	Dry sorbent injection after acid gas and PM control, one data point only	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	2,3,7,8-Tetrachlorodibenzofuran		6.8 x 10E-8 lb/ton feed	Capacity > 600 tons/day, ESP control only, overall average of several source averages, range is 7.2 x 10E-9 - 2.0 x 10E-7 lb/ton	180

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	2,3,7,8-Tetrachlorodibenzofuran		9.0 x 10E-8 lb/ton feed	Capacity > 600 tons/day, uncontrolled, overall average of several source averages, range is 6.8 x 10E-9 - 1.08 x 10E-7 lb/ton	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	2,3,7,8-Tetrachlorodibenzofuran		4.0 x 10E-9 lb/ton feed	Capacity > 600 tons/day, spray drying after acid gas and PM control, one data point only	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	2,3,7,8-Tetrachlorodibenzofuran		8.8 x 10E-9 lb/ton feed	Capacity < 600 tons/day, dry sorbent injection after acid gas and PM control, range is 1.42 x 10E-9 - 3.0 x 10E-8 lb/ton	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	2,3,7,8-Tetrachlorodibenzofuran		5.4 x 10E-10 lb/ton feed	Capacity < 600 tons/day, spray drying after acid gas and PM control, one data point only	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	2,3,7,8-Tetrachlorodibenzofuran		2.0 x 10E-8 lb/ton feed	Capacity < 600 tons/day, ESP control only, overal avg. of several source avgs., range is 1.9 x 10E-8 - 2.2 x 10E-8 lb/ton	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	2,3,7,8-Tetrachlorodibenzofuran		18 ug/Mg feed	Capacity < 600 tons/day, uncontrolled, overall average of several source averages	180
Municipal waste combustion	4953	Mass burn waterwall combustor, built before 1980	501001	2,3,7,8-Tetrachlorodibenzofuran		1.04 x 10E-6 lb/ton feed	ESP control only, overall average of several source averages, range is 2.2 x 10E-7 - 2.2 x 10E-6 lb/ton	180
Municipal waste combustion	4953	Mass burn, refractory facility	501001	2,3,7,8-Tetrachlorodibenzofuran		3.4 x 10E-7 lb/ton feed	ESP control only, overall average of several source averages, range is 2.8 x 10E-7 - 4.2 x 10E-7 lb/ton	180
Municipal waste combustion	4953	ESP catch - fly ash	5	Tetrachlorodibenzofurans, total		Not detectable - 4 x 10E-4 lb/ton	Appr. 40 sites tested, homologue data given in refer., (newer data may be avail. from indiv. refer.	114
Municipal waste combustion	4953	Flue gas from stack - fly ash	5	Tetrachlorodibenzofurans, total		10.6 - 309 ng/m3	Four sites tested, homologue data given in refer., (newer data may be avail. from indiv. references	114
Municipal waste combustion	4953	Mass burn	5	Tetrachlorodibenzofurans, total		0.32 - 4600 ng/Nm3 @ 12% CO2	Developed from test data, w/ various controls - ESP or water spray humidifier/dry sorbent injection	117
Municipal waste combustion	4953	Mass burn, water wall incinerator	5	Tetrachlorodibenzofurans, total		7.3 - 4540 ng/Nm3 @ 12% CO2	n = 11, 6 locations, controlled with an ESP	118
Municipal waste combustion	4953	Mass burn, water wall incinerator	5	Tetrachlorodibenzofurans, total		5.74 x 10E-8 - 3.44 x 10E-5 lb/ton feed	n = 7, 4 locations, controlled with an ESP	118
Municipal waste combustion	4953	Modular incinerator	5	Tetrachlorodibenzofurans, total		12.2 - 340 ng/Nm3 @ 12% CO2	Developed from test data, all uncontrolled	117
Municipal waste combustion	4953	Refuse derived fuel incinerator	5	Tetrachlorodibenzofurans, total		22 - 480 ng/Nm3 @ 12% CO2	Developed from test data, most ESP controlled, one with ESP/cyclone	117

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Municipal waste combustion	4953	Refuse derived fuel incinerator	0	Tetrachlorodibenzofurans, total		46.9 - 5800 ng/Nm3	n = 8, 3 locations, controlled with an ESP	118
Municipal waste combustion	4953	Stack - fly ash	0	Tetrachlorodibenzofurans, total		161 ng/m3	One site tested, homologue data given in refer., isomer data may be avail. from indiv. references	116
Municipal waste combustion	4953	Stack - fly ash	0	Tetrachlorodibenzofurans, total		1.4 x 10E-8 lb/ton	One site tested, homologue data given in refer., isomer data may be avail. from indiv. references	116
Municipal waste combustion	4953	Starved air combustor	0	Tetrachlorodibenzofurans, total		12.2 - 124 ng/Nm3 @ 12% CO2	n = 5, 3 locations, no controls	118
Municipal waste combustion	4953	Starved air combustor	0	Tetrachlorodibenzofurans, total		8.6 x 10E-8 - 1.05 x 10E-6 lb/ton feed	n = 5, 3 locations, no controls	118
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Tetrachlorodibenzofurans, total		1.32 x 10E-6 lb/ton RDF combusted	100% RDF fuel only, ESP control only, overall average of several source averages, range is 1.92 x 10E-7 - 3.4 x 10E-6 lb/ton	180
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Tetrachlorodibenzofurans, total		2.0 x 10E-6 lb/ton RDF combusted	100% RDF only, uncontrolled, overall average of several source averages, range is 1.32 x 10E-6 - 2.6 x 10E-6 lb/ton	180
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Tetrachlorodibenzofurans, total		4.0 x 10E-9 lb/ton RDF combusted	Spray drying after acid gas and PM control, 100% RDF fuel only, range is 2.0 x 10E-9 - 5.8 x 10E-9 lb/ton	180
Municipal waste combustion	4953	Modular starved-air combustor	501001	Tetrachlorodibenzofurans, total		1.52 x 10E-5 lb/ton feed	ESP control only, overall average of several source averages, range is 2.2 x 10E-7 - 3.0 x 10E-5 lb/ton	180
Municipal waste combustion	4953	Modular starved-air combustor	501001	Tetrachlorodibenzofurans, total		4.4 x 10E-7 lb/ton feed	Uncontrolled, overall average of several source averages, range is 8.6 x 10E-8 - 1.06 x 10E-6 lb/ton	180
Municipal waste combustion	4953	Modular excess-air combustor	501001	Tetrachlorodibenzofurans, total		2.4 x 10E-7 lb/ton feed	ESP control only, overall average of several source averages, range is 1.26 x 10E-7 - 2.8 x 10E-7 lb/ton	180
Municipal waste combustion	4953	Modular excess-air combustor	501001	Tetrachlorodibenzofurans, total		8.6 x 10E-9 lb/ton feed	Dry sorbent injection after acid gas and PM control, one data point only	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	Tetrachlorodibenzofurans, total		4.0 x 10E-7 lb/ton feed	Capacity > 600 tons/day, ESP control only, overall avg of several source avgs, range is 1.64 x 10E-7 - 8.0 x 10E-7 lb/ton	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	Tetrachlorodibenzofurans, total		6.6 x 10E-7 lb/ton feed	Capacity > 600 tons/day, uncontrolled, overall avg of several source avgs, range is 1.32 x 10E-7 - 1.42 x 10E-6 lb/ton	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	Tetrachlorodibenzofurans, total		1.52 x 10E-7 lb/ton feed	Capacity > 600 tons/day, spray drying after acid gas and PM control, one data point only	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Tetrachlorodibenzofurans, total		6.8 x 10E-8 lb/ton feed	Capacity < 600 tons/day, uncontrolled, one data point only	180

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Tetrachlorodibenzofurans, total		2.2 x 10E-7 lb/ton feed	Capacity < 600 tons/day, ESP control only, overall avg of several source avgs, range is 5.8 x 10E-8 - 4.0 x 10E-7 lb/ton	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Tetrachlorodibenzofurans, total		2.6 x 10E-9 lb/ton feed	Capacity < 600 tons/day, spray drying after acid gas and PM control, one data point only	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Tetrachlorodibenzofurans, total		1.02 x 10E-7 lb/ton feed	Capacity < 600 tons/day, dry sorbent injection after acid gas and PM control, range is 5.4 x 10E-8 - 2.2 x 10E-7 lb/ton	180
Municipal waste combustion	4953	Mass burn waterwall combustor, built before 1980	501001	Tetrachlorodibenzofurans, total		1.12 x 10E-5 lb/ton feed	ESP control only, overall average of several source averages, range is 9.0 x 10E-7 - 3.4 x 10E-5 lb/ton	180
Municipal waste combustion	4953	Mass burn, refractory facility	501001	Tetrachlorodibenzofurans, total		7.6 x 10E-6 lb/ton feed	ESP control only, range is 6.0 x 10E-6 - 9.0 x 10E-6 lb/ton	180
Municipal waste combustion	4953	ESP catch - fly ash	5	2,3,7,8-Tetrachlorodibenz o-p-dioxin	1746016	Not detectable - 2 x 10E-4 lb/ton	Appr. 60 sites tested, homologue data given in refer., isomer data may be avail. from indiv. refer.	116
Municipal waste combustion	4953	Flue gas from stack - fly ash	5	2,3,7,8-Tetrachlorodibenz o-p-dioxin	1746016	0.41 - 1.7 ng/m3	Four sites tested, homologue data given in refer., isomer data may be avail. from indiv. references	116
Municipal waste combustion	4953	Mass burn, water wall incinerator	5	2,3,7,8-Tetrachlorodibenz o-p-dioxin	1746016	0.101 - 62.5 ng/Nm3 @ 12% CO2	n = 10, 6 locations, controlled with an ESP	118
Municipal waste combustion	4953	Mass burn, water wall incinerator	5	2,3,7,8-Tetrachlorodibenz o-p-dioxin	1746016	7.8 x 10E-10 - 5.78 x 10E-7 lb/ton feed	n = 6, 4 locations, controlled with an ESP	118
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	2,3,7,8-Tetrachlorodibenz o-p-dioxin	1746016	3.8 x 10E-8 lb/ton RDF combusted	100% RDF fuel only, ESP control only, overall average of several source averages, range is 1.0 x 10E-9 - 7.2 x 10E-8 lb/ton	180
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	2,3,7,8-Tetrachlorodibenz o-p-dioxin	1746016	1.4 x 10E-8 lb/ton RDF combusted	100% RDF fuel only, uncontrolled, overall average of several source averages, range is 7.4 x 10E-9 - 2.0 x 10E-8 lb/ton	180
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	2,3,7,8-Tetrachlorodibenz o-p-dioxin	1746016	3.4 x 10E-11 lb/ton RDF combusted	Spray drying after acid gas & PM ctrl, overall avg. of several source avgs., 100% RDF fuel only, range is 2.4 x 10E-11 - 4.4 x 10E-11 lb/ton	180
Municipal waste combustion	4953	Modular starved-air combustor	5010[illegible]	2,3,7,8-Tetrachlorodibenz o-p-dioxin	1746016	1.2 x 10E-8 lb/ton feed	ESP control only, overall average of several source averages, range is 1.6 x 10E-10 - 3.4 x 10E-8 lb/ton	180
Municipal waste combustion	4953	Modular starved-air combustor	501001	2,3,7,8-Tetrachlorodibenz o-p-dioxin	1746016	8.8 x 10E-9 lb/ton feed	Uncontrolled, overall average of several source averages, range is 4.6 x 10E-9 - 1.3 x 10E-8 lb/ton	180
Municipal waste combustion	4953	Modular excess-air combustor	501001	2,3,7,8-Tetrachlorodibenz o-p-dioxin	1746016	1 x 10E-9 lb/ton feed	ESP control only, overall average of several source averages	180

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INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Municipal waste combustion	4953	Modular excess-air combustor	501001	2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	4.4 x 10E-11 lb/ton feed	Dry sorbent injection after acid gas and PM control, one data point only	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	2.4 x 10E-9 lb/ton feed	Capacity > 600 tons/day, ESP control only, overall avg. of several source avgs., range is 5.4 x 10E-10 - 1.0 x 10E-8 lb/ton	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	5.8 x 10E-9 lb/ton feed	Capacity > 600 tons/day, uncontrolled, overall average of several source averages, range is 1.14 x 10E-9 - 1.4 x 10E-8 lb/ton	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	1 x 10E-9 lb/ton feed	Capacity > 600 tons/day, spray drying after acid gas and PM control, one data point only	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	1 x 10E-9 lb/ton feed	Capacity < 600 tons/day, spray drying after acid gas and PM control, one data point only	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	5.8 x 10E-10 lb/ton feed	Cap. < 600 tons/day, dry sorbent injection after acid gas and PM control, range is 1.02 x 10E-10 - 1.04 x 10E-9 lb/ton	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	3 x 10E-9 lb/ton feed	Capacity < 600 tons/day, uncontrolled, one data point only	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	1.7 x 10E-9 lb/ton feed	Capacity < 600 tons/day, ESP control only, range is 8.0 x 10E-10 - 2.6 x 10E-9 lb/ton	180
Municipal waste combustion	4953	Mass burn waterwall combustor, built before 1980	501001	2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	2.2 x 10E-7 lb/ton feed	ESP control only, overall average of several source averages, range is 4.2 x 10E-9 - 5.8 x 10E-7 lb/ton	180
Municipal waste combustion	4953	Mass burn, refractory facility	501001	2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	1.0 x 10E-7 lb/ton feed	ESP control only, overall average of several source averages, range is 9.8 x 10E-8 - 1.0 x 10E-7 lb/ton	180
Municipal waste combustion	4953	ESP catch - fly ash	5	Tetrachlorodibenzo-p-dioxins, total		Not detectable - 2.2 x 10E-4 lb/ton	Appr. 60 sites tested, homologue data given in refer., isomer data may be avail. from indiv. refer.	116
Municipal waste combustion	4953	Flue gas from stack - fly ash	5	Tetrachlorodibenzo-p-dioxins, total		3.05 - 128 ng/m3	Four sites tested, homologue data given in refer., isomer data may be avail. from indiv. references	116
Municipal waste combustion	4953	Mass burn	5	Tetrachlorodibenzo-p-dioxins, total		0.20 - 1200 ng/Nm3 @ 12% CO2	Developed from test data w/ various controls - ESP or water spray humidifer/dry sorbent injection	117
Municipal waste combustion	4953	Mass burn, water wall incinerator	5	Tetrachlorodibenzo-p-dioxins, total		1.268 x 10E-8 - 6.04 x 10E-6 lb/ton feed	n = 7, 4 locations, controlled with an ESP	118
Municipal waste combustion	4953	Mass burn, water wall incinerator	5	Tetrachlorodibenzo-p-dioxins, total		19.9 - 3500 ng/Nm3 @ 12% CO2	n = 8, 3 locations, controlled with an ESP	118

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Municipal waste combustion	4953	Modular incinerator	S	Tetrachlorodibenzo-p-dioxins, total		1.0 - 43.7 ng/Nm3 @ 12% CO2	Developed from test data, all uncontrolled	117
Municipal waste combustion	4953	Refuse derived fuel incinerator	S	Tetrachlorodibenzo-p-dioxins, total		3.5 - 260 ng/Nm3 @ 12% CO2	Developed from test data, most ESP controlled, one with ESP/cyclone	117
Municipal waste combustion	4953	Stack - fly ash	S	Tetrachlorodibenzo-p-dioxins, total		57 ng/m3	One site tested, homologue data given in refer., isomer data may be avail. from indiv. references	116
Municipal waste combustion	4953	Stack - fly ash	S	Tetrachlorodibenzo-p-dioxins, total		4 x 10E-6 lb/ton	One site tested, homologue data given in refer., isomer data may be avail. from indiv. references	116
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Tetrachlorodibenzo-p-dioxins, total		4.8 x 10E-7 lb/ton RDF combusted	100% RDF fuel only, ESP control only, overall average of several source averages, range is 1.3 x 10E-8 - 1.28 x 10E-6 lb/ton	180
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Tetrachlorodibenzo-p-dioxins, total		3.4 x 10E-7 lb/ton RDF combusted	100% RDF only, uncontrolled, overall average of several source averages, range is 2.4 x 10E-7 - 4.4 x 10E-7 lb/ton	180
Municipal waste combustion	4953	Refuse derived fuel incinerator	501001	Tetrachlorodibenzo-p-dioxins, total		8.4 x 10E-10 lb/ton RDF combusted	Spray drying after acid gas and PM control, 100% RDF fuel only, range is 9 x 10E-11 - 1.8 x 10E-9 lb/ton	180
Municipal waste combustion	4953	Modular starved-air combustor	501001	Tetrachlorodibenzo-p-dioxins, total		1.82 x 10E-6 lb/ton feed	ESP control only, overall average of several source averages, range is 2.6 x 10E-8 - 3.6 x 10E-6 lb/ton	180
Municipal waste combustion	4953	Modular starved-air combustor	501001	Tetrachlorodibenzo-p-dioxins, total		5.6 x 10E-8 lb/ton feed	Uncontrolled, overall average of several source averages, range is 8.0 x 10E-9 - 1.62 x 10E-7 lb/ton	180
Municipal waste combustion	4953	Modular excess-air combustor	501001	Tetrachlorodibenzo-p-dioxins, total		4.0 x 10E-8 lb/ton feed	ESP control only, overall average of several source averages, range is 1.36 x 10E-8 - 6.6 x 10E-8 lb/ton	180
Municipal waste combustion	4953	Modular excess-air combustor	501001	Tetrachlorodibenzo-p-dioxins, total		2 x 10E-9 lb/ton feed	Dry sorbent injection after acid gas and PM control, one data point only	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	Tetrachlorodibenzo-p-dioxins, total		2.2 x 10E-8 lb/ton feed	Capacity > 400 tons/day, ESP control only, overall average of several source averages, range is 9.2 x 10E-9 - 2.8 x 10E-8 lb/ton	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	Tetrachlorodibenzo-p-dioxins, total		7.8 x 10E-8 lb/ton feed	Capacity > 400 tons/day, uncontrolled, overall average of several source averages, range is 2.2 x 10E-8 - 1.4 x 10E-7 lb/ton	180
Municipal waste combustion	4953	Large mass burn rotary waterwall combustor built after 1980	501001	Tetrachlorodibenzo-p-dioxins, total		1.1 x 10E-8 lb/ton feed	Capacity > 400 tons/day, spray drying after acid gas and PM control, one data point only	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Tetrachlorodibenzo-p-dioxins, total		7.0 x 10E-9 lb/ton feed	Capacity < 400 tons/day, uncontrolled, one data point only	180

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Tetrachlorodibenzo-p-dioxins, total		3.2 x 10E-8 lb/ton feed	Capacity < 400 tons/day, ESP control only, overall average of several source averages, range is 1.26 x 10E-8 - 8.2 x 10E-8 lb/ton	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Tetrachlorodibenzo-p-dioxins, total		0.74 ug/Mg feed	Capacity < 400 tons/day, spray drying after acid gas and PM control, one data point only	180
Municipal waste combustion	4953	Mass burn waterwall combustor, small size new model to any age medium	501001	Tetrachlorodibenzo-p-dioxins, total		2.0 x 10E-8 lb/ton feed	Capacity < 400 tons/day, dry sorbent injection after acid gas and PM control, range is 1.08 x 10E-8 - 2.4 x 10E-8 lb/ton	180
Municipal waste combustion	4953	Mass burn waterwall combustor, built before 1980	501001	Tetrachlorodibenzo-p-dioxins, total		2.8 x 10E-6 lb/ton feed	ESP control only, overall average of several source averages, range is 6.4 x 10E-8 - 6.0 x 10E-6 lb/ton	180
Municipal waste combustion	4953	Mass burn, refractory facility	501001	Tetrachlorodibenzo-p-dioxins, total		3.4 x 10E-6 lb/ton feed	ESP control only, overall average of several source averages, range is 3.0 x 10E-6 - 3.6 x 10E-6 lb/ton	180
Municipal waste combustion	4953	Incinerator stack	501001	Zinc	7440666	1.0 lb/ton munic. solid waste-dry wt.	Controlled by spray-baffle scrubber, based on material balance for model incinerator	98
Naphthalene production		Process emissions		Naphthalene	91203	0.478 lb/ton naphthalene produced	Based on POM emissions and 87% naphthalene	99
Naphthalene production		Storage		Naphthalene	91203	0.0454 lb/ton produced	Based on data from State files and engineering judgement	99
Natural gas combustion		Commercial boiler	10300401	Ammonia	7664417	0.49 lb/10E6 cubic feet gas burned	Sources emitting > 100 tons NH3/year	179
Natural gas combustion		Industrial boilers	10200401	Ammonia	7664417	3.2 lbs/10E6 cubic feet gas burned	Sources emitting > 100 tons NH3/year	179
Natural gas combustion		Boilers, exhaust system	102006	Benzene	71432	1.18% by vol (or 4% by wt) of total VOC	South Coast study, California, engineering judgement	132
Natural gas combustion		Commercial/institutional	103006	Formaldehyde	50000	220.3 lb/10E12 Btu heat input	Control status unspecified, based on source tests	106
Natural gas combustion		Domestic		Formaldehyde	50000	997 lb/10E12 Btu heat input	Control status unspecified, based on source tests	106
Natural gas combustion		Industrial	102006	Formaldehyde	50000	88.12 lb/10E12 Btu heat input	Control status unspecified, based on source tests	106
Natural gas combustion		Double shell boilers, home heating		Polycyclic organic matter		1.113 lb/10E12 Btu heat input	Represents primarily particulate POM, uncontrolled	114
Natural gas combustion		Firetube boiler, process heater	10200401	Polycyclic organic matter		0.649 lb/10E12 Btu heat input	Represents primarily particulate POM, uncontrolled	114

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Natural gas combustion		Hot air furnace, home heating		Polycyclic organic matter		0.769 lb/10E12 Btu heat input	Represents primarily particulate POM, uncontrolled	114
Natural gas combustion		Scotch marine, hospital heating	10200401	Polycyclic organic matter		43.5 lb/10E12 Btu heat input	Represents primarily particulate POM, uncontrolled	114
Natural gas combustion		Wall space heater, home heating		Polycyclic organic matter		43.77 lb/10E12 Btu heat input	Represents primarily particulate POM, uncontrolled	114
Natural gas combustion	49	Utility boiler	10100601	Ammonia	7664417	3.2 lbs/10E6 cubic feet gas burned	Sources emitting > 100 tons NH3/year, emission factor rating C	179
Natural gas combustion - comercial/institutional		Tangential or wall-fired boiler	103004	Mercury	7439976	11.343 lb/10E12 Btu	Uncontrolled emissions	213
Natural gas combustion - utility	491	Tangential-fired boiler	10100604	Mercury	7439976	2.27 lb/10E12 Btu	Controlled emissions, wet scrubber at 80% efficiency for Hg	213
Natural gas combustion - utility	491	Wall-fired boiler	10100601	Mercury	7439976	2.272 lb/10E12 Btu	Controlled emissions, wet scrubber at 80% efficiency for Hg	213
Natural gas combustion - utility	491	Tangential-fired boiler	10100604	Mercury	7439976	11.363 lb/10E12 Btu	Uncontrolled emissions, based on stack tests	213
Natural gas combustion - utility	491	Wall-fired boiler	10100601	Mercury	7439976	11.363 lb/10E12 Btu	Uncontrolled emissions, based on stack tests	213
Neoprene manufacture	2822	Dichlorobutene refining	301	1,3-Butadiene	106990	3.12 lb/ton neoprene produced	Calculated from national emissions and national capacity, mostly controlled	78
Neoprene manufacture	2822	Dichlorobutene synthesis	301	1,3-Butadiene	106990	0.4 lb/ton neoprene produced	Calculated from national emissions and national capacity, mostly controlled	78
Neoprene manufacture	2822	Equipment leak	301	1,3-Butadiene	106990	2.2 lb/ton neoprene produced	Uncontrolled, calculated from national emissions and national capacity	78
Neoprene manufacture	2822	Jet vent scrubber	301026	1,3-Butadiene	106990	0.094 lb/ton neoprene produced	Engineering Judgement	123
Neoprene manufacture	2822	Equipment leak	301018	1,3-Butadiene	106990	2.954 tons/yr	Uncontrolled, average emission factor based on 2 facilities	144
Neoprene manufacture	2822	Process vents	301018	1,3-Butadiene	106990	2.226 tons/yr	Controlled (unspecified), average emission factor based on 2 facilities	144
Neoprene manufacture	2822	Process vents	301018	1,3-Butadiene	106990	12.280 lb/ton	Uncontrolled, average emission factor based on 2 facilities	144
Neoprene manufacture	2822	Batch polykettles	301026	Chloroprene	126998	2.2 lb/ton neoprene	Engineering Judgement	123
Neoprene manufacture	2822	Blend tanks	30102614	Chloroprene	126998	0.32 lb/ton neoprene	Engineering Judgement	123

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Neoprene manufacture	2822	Chloroprene vent condenser	301026	Chloroprene	126998	0.018 lb/ton neoprene	Engineering judgement	123
Neoprene manufacture	2822	Dryer exhaust	30102609	Chloroprene	126998	1.88 lb/ton neoprene	Engineering judgement	123
Neoprene manufacture	2822	Emulsion storage tanks	30126	Chloroprene	126998	0.34 lb/ton neoprene	Engineering judgement	123
Neoprene manufacture	2822	Heels tank	301026	Chloroprene	126998	0.022 lb/ton neoprene	Engineering judgement	123
Neoprene manufacture	2822	Jet vent scrubber	301026	Chloroprene	126998	0.34 lb/ton neoprene	Engineering judgement	123
Neoprene manufacture	2822	Recycle chloroprene tank	301026	Chloroprene	126998	0.006 lb/ton neoprene	Engineering judgement	123
Neoprene manufacture	2822	Refined chloroprene tanks	301026	Chloroprene	126998	0.226 lb/ton neoprene	Engineering judgement	123
Neoprene manufacture	2822	Strippers	30102611	Chloroprene	126998	1.26 lb/ton neoprene	Engineering judgement	123
Neoprene manufacture	2822	Tank car vents	30126	Chloroprene	126998	0.42 lb/ton neoprene	Engineering judgement	123
Neoprene manufacture	2822	Vacuum colum jet	301026	Chloroprene	126998	0.58 lb/ton neoprene	Engineering judgement	123
Neoprene manufacture	2822	Vaporization from process wastewater	301026	Chloroprene	126998	0.07 lb/ton neoprene	Engineering judgement	123
Neoprene manufacture	2822	Wash belts	30126	Chloroprene	126998	0.058 lb/ton neoprene	Engineering judgement	123
Neoprene manufacture	2822	Aqueous waste vent	301026	Hydrogen chloride	7647010	2 x 10E-5 lb/ton neoprene	Engineering judgement	123
Neoprene manufacture	2822	Chloroprene vent condenser	301026	Hydrogen chloride	7647010	0.004 lb/ton neoprene	Engineering judgement	123
Neoprene manufacture	2822	Incinerator	301026	Hydrogen chloride	7647010	0.032 lb/ton neoprene	Engineering judgement	123
Neoprene manufacture	2822	Batch polykettles	301026	Toluene	108883	0.036 lb/ton neoprene	Engineering judgement	123
Neoprene manufacture	2822	Blend tanks	30102614	Toluene	108883	0.1 lb/ton neoprene	Engineering judgement	123
Neoprene manufacture	2822	Dryer exhaust	30102609	Toluene	108883	4.0 lb/ton neoprene	Engineering judgement	123
Neoprene manufacture	2822	Solution asteup tank	30126	Toluene	108883	0.08 lb/ton neoprene	Engineering judgement	123
Neoprene manufacture	2822	Strippers	30102611	Toluene	108883	0.038 lb/ton neoprene	Engineering judgement	123
Neoprene manufacture	2822	Wash belts	30126	Toluene	108883	0.3 lb/ton neoprene	Engineering judgement	123
Nickel electro-deposition	3471	Entire process		Nickel	7440020	4.95 x 10E-7 lb/hr/amp	Value is for striking, can be used for plating, measured factor	92
Nitrile elastomer production	30	Secondary sources (wastewater, etc.)	308006	1,3-Butadiene	106990	0.010 lb/ton nitrile elastomer produced	Uncontrolled, average emission factor based on 2 facilities	164

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INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Nitrile elastomer production	30	Equipment leak	308004	1,3-Butadiene	106990	8.741 tons/yr	Uncontrolled, average emission factor based on 3 facilities	166
Nitrile elastomer production	30	Process vents	308004	1,3-Butadiene	106990	16 lb/ton nitrile elastomer produced	Uncontrolled, average emission factor based on 4 facilities	166
Nitrile elastomer production	30	Process vents	308004	1,3-Butadiene	106990	4 lb/ton nitrile elastomer produced	Controlled (unspecified), average emission factor based on 4 facilities	166
Nitrobenzene and aniline production	2865	Fugitive emissions	30119580	Nitrobenzene	98953	0.62 lb/ton produced	Based on site visit data	13
Nitrobenzene and aniline production	2865	General emissions	30119501	Nitrobenzene	98953	0.016 lb/ton produced	Based on site visit data	13
Nitrobenzene and aniline production	2865	Storage	407080	Nitrobenzene	98953	0.012 lb/ton produced	Based on site visit data	13
Nitrobenzene production	2865	Benzene storage	407	Benzene	71432	0.085 lb/ton nitrobenzene	Controlled, internal floating roof, 85% eff., based on 1.98 x 10E8 lb/yr capacity model plant	132
Nitrobenzene production	2865	Benzene storage	407036	Benzene	71432	0.562 lb/ton nitrobenzene	Uncontrolled, based on 3.31 x 10E8 lb/yr capacity model plant	132
Nitrobenzene production	2865	Benzene storage	407036	Benzene	71432	0.566 lb/ton nitrobenzene produced	Uncontrolled, based on 1.98 x 10E8 lb/yr capacity model plant	132
Nitrobenzene production	2865	Benzene storage	407	Benzene	71432	0.0842 lb/ton nitrobenzene produced	Controlled, floating roof, 85% eff., based on 3.31 x 10E8 lb/yr capacity model plant	132
Nitrobenzene production	2865	Fugitive emissions	30119580	Benzene	71432	1.24 lb/ton nitrobenzene	Uncontrolled, based on 1.98 x 10E8 lb/yr capacity model plant	132
Nitrobenzene production	2865	Fugitive emissions	30119580	Benzene	71432	0.33 lb/ton nitrobenzene	Contr., 67.7% eff, detect/correct minor leaks/each. seals, based on 1.98 x 10E8 lb/yr cap. model pla	132
Nitrobenzene production	2865	Fugitive emissions	30119580	Benzene	71432	0.76 lb/ton nitrobenzene produced	Uncontrolled, each plant, 42 pumps, 500 process valves, 20 pressure-relief valves	132
Nitrobenzene production	2865	Fugitive emissions	30119580	Benzene	71432	0.198 lb/ton nitrobenzene produced	Contr., 67.7% eff., detect/correct leaks/each. seals, 42 pumps, 500 process valves, 20 pres-rel val.	132
Nitrobenzene production	2865	Nitrobenzene stripper	30119505	Benzene	71432	0.0268 lb/ton nitrobenzene	Controlled, thermal oxidizer, 99% eff., based on 1.98 x 10E8 lb/yr capacity model plant	132
Nitrobenzene production	2865	Nitrobenzene stripper	30119505	Benzene	71432	0.34 lb/ton nitrobenzene	Uncontrolled, based on 1.98 x 10E8 and 3.31 x 10E8 lb/yr capacity model plants	132
Nitrobenzene production	2865	Nitrobenzene stripper	30119505	Benzene	71432	0.0286 lb/ton nitrobenzene	Controlled, thermal oxidizer, 99.0% eff., based on 3.31 x 10E8 lb/yr capacity model plant	132

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Nitrobenzene production	2865	Reactor and separator	30119502	Benzene	71432	1.92 lb/ton nitrobenzene	Uncontrolled, based on 1.98 x 10E8 and 3.31 x 10E8 lb/yr capacity model plants	132
Nitrobenzene production	2865	Secondary emissions	301195	Benzene	71432	0.20 lb/ton nitrobenzene produced	Uncontrolled, based on 1.98 x 10E8 and 3.31 x 10E8 lb/yr capacity model plants	132
Nitrobenzene production	2865	Small benzene storage	407036	Benzene	71432	0.156 lb/ton nitrobenzene	Uncontrolled, based on 1.98 x 10E8 lb/yr capacity model plant	132
Nitrobenzene production	2865	Small benzene storage	407036	Benzene	71432	0.154 lb/ton nitrobenzene	Uncontrolled, based on 3.31 x 10E8 lb/yr capacity model plant	132
Nitrobenzene production	2865	Wash and neutralization	30119504	Benzene	71432	0.1552 lb/ton nitrobenzene	Controlled, vent absorber, 94.6% eff., based on 1.98 x 10E8 lb/yr capacity model plant	132
Nitrobenzene production	2865	Wash and neutralization	30119504	Benzene	71432	0.1548 lb/ton nitrobenzene produced	Uncontrolled, based on 1.98 x 10E8 and 3.31 x 10E8 lb/yr capacity model plants	132
Nitrobenzene production	2865	Wash and neutralization	30119504	Benzene	71432	0.0162 lb/ton nitrobenzene	Controlled, vent absorber, 94.6% eff., based on 3.31 x 10E8 lb/yr capacity model plant	132
Nitrobenzene production	2865	Waste-acid storage	30119506	Benzene	71432	0.102 lb/ton nitrobenzene	Uncontrolled, based on 1.98 x 10E8 lb/yr capacity model plant	132
Nitrobenzene production	2865	Waste-acid storage	30119506	Benzene	71432	0.096 lb/ton nitrobenzene	Uncontrolled, based on 3.31 x 10E8 lb/yr capacity model plant	132
Nitrobenzene production	2865	Waste-acid stripper	30119503	Benzene	71432	0.34 lb/ton nitrobenzene produced	Uncontrolled, based on 1.98 x 10E8 and 3.31 x 10E8 lb/yr capacity model plants	132
Nitrobenzene use as a chemical intermediate	2869	Fugitive emissions	301	Nitrobenzene	98953	0.6 lb/ton used	Based on engineering estimate	13
Nitrobenzene use as a chemical intermediate	2869	General emissions	301	Nitrobenzene	98953	2.10 lb/ton used	Based on engineering estimate	13
Nitrobenzene use as a chemical intermediate	2869	Storage	407080	Nitrobenzene	98953	0.3 lb/ton used	Based on engineering estimate	13
Nonferrous alloy production	33	Entire process	3	Vanadium	7440622	12 lb/ton of vanadium processed	Control status unspecified, based on information obtained from two industrial sources	56
Nonferrous metals production	3341	Melt furnace at electrical alloy facility	304	Nickel	7440020	2 lb/ton of nickel charged	Controlled by fabric filter, based on engineering judgement	110
Nonferrous metals production	3341	Melt furnace at nickel-copper or copper-nickel facility	304	Nickel	7440020	2 lb/ton of nickel charged	Controlled by fabric filter, based on engineering judgement	110
Nonferrous metals production	3341	Melt furnace at other nonferrous alloy facility	304	Nickel	7440020	2 lb/ton of nickel charged	Controlled by fabric filter, based on engineering judgement	110

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INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Nonferrous metals production	3341	Melt furnace at permanent magnet alloy facility	304	Nickel	7440020	2 lb/ton of nickel charged	Controlled by fabric filter, based on engineering judgement	110
Nonferrous metals production	3341	Melt furnace at superalloy facility	304	Nickel	7440020	2 lb/ton of nickel charged	Controlled by fabric filter, based on engineering judgement	110
Nonylphenol production	2869	Fugitive emissions	301	Phenol	108952	0.38 lb/ton used	From engineering estimates	13
Nonylphenol production	2869	General emissions	301	Phenol	108952	1.4 lb/ton used	From engineering estimates	13
Nonylphenol production	2869	Storage	407084	Phenol	108952	0.02 lb/ton used	From engineering estimates	13
Oil and coal combustion	49	Stack - particulate	102	Polychlorinated dibenzo-p-dioxins, total		1.34 x 10E-4 lb/ton	No penta homologue included, one location, TCDD detection = 4 x 10E-5 lb/ton	119
Oil and coal combustion	49	Stack - particulate	102	2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	Not detectable	One location, detection limit = 2 x 10E-5 lb/ton	119
Oil combustion		Fuel oil		Ammonia	7664417	0.8 lb/1000 gallons fuel oil burned	Sources emitting > 100 tons NH3/year	179
Oil combustion		Distillate oil-fired boiler, util/comm/industr/residential	1	Arsenic	7440382	4.2 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Oil combustion		Distillate oil-fired boiler, util/comm/industr/residential	1	Arsenic	7440382	2.06 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Oil combustion		Distillate oil-fired boiler, util/comm/industr/residential	1	Arsenic	7440382	0.50 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Oil combustion		Distillate oil-fired boiler, util/comm/industr/residential	1	Arsenic	7440382	0.42 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Oil combustion		Residual oil-fired boiler, util/comm/industr/residential	1	Arsenic	7440382	19 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Oil combustion		Residual oil-fired boiler, util/comm/industr/residential	1	Arsenic	7440382	9.31 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36

CLEARINGHOUSE

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Oil combustion		Residual oil-fired boiler, util/commerc/industr/residential	1	Arsenic	7440382	2.28 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Oil combustion		Residual oil-fired boiler, util/commerc/industr/residential	1	Arsenic	7440382	1.90 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Oil combustion		Distillate oil-fired boiler, util/commerc/industr/residential	1	Beryllium	7440417	2.5 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Oil combustion		Distillate oil-fired boiler, util/commerc/industr/residential	1	Beryllium	7440417	1.58 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Oil combustion		Distillate oil-fired boiler, util/commerc/industr/residential	1	Beryllium	7440417	0.35 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Oil combustion		Distillate oil-fired boiler, util/commerc/industr/residential	1	Beryllium	7440417	0.15 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Oil combustion		Residual oil-fired boiler, util/commerc/industr/residential	1	Beryllium	7440417	4.2 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Oil combustion		Residual oil-fired boiler, util/commerc/industr/residential	1	Beryllium	7440417	2.65 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Oil combustion		Residual oil-fired boiler, util/commerc/industr/residential	1	Beryllium	7440417	0.59 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Oil combustion		Residual oil-fired boiler, util/commerc/industr/residential	1	Beryllium	7440417	0.25 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Oil combustion		Distillate oil-fired boiler, util/commerc/industr/residential	1	Cadmium	7440439	10.5 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Oil combustion		Distillate oil-fired boiler, util/cogenerc/industr/residential	1	Cadmium	7440439	7.48 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Oil combustion		Distillate oil-fired boiler, util/cogenerc/industr/residential	1	Cadmium	7440439	1.58 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Oil combustion		Distillate oil-fired boiler, util/cogenerc/industr/residential	1	Cadmium	7440439	0.63 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	34
Oil combustion		Residual oil-fired boiler, util/cogenerc/industr/residential	1	Cadmium	7440439	15.7 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Oil combustion		Residual oil-fired boiler, util/cogenerc/industr/residential	1	Cadmium	7440439	46.86 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Oil combustion		Residual oil-fired boiler, util/cogenerc/industr/residential	1	Cadmium	7440439	9.90 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Oil combustion		Residual oil-fired boiler, util/cogenerc/industr/residential	1	Cadmium	7440439	3.96 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	34
Oil combustion		Distillate oil-fired boiler, util/cogenerc/industr/residential	1	Chromium	7440473	47.5 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Oil combustion		Distillate oil-fired boiler, util/cogenerc/industr/residential	1	Chromium	7440473	27.8 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Oil combustion		Distillate oil-fired boiler, util/cogenerc/industr/residential	1	Chromium	7440473	13.92 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Oil combustion		Distillate oil-fired boiler, util/cogenerc/industr/residential	1	Chromium	7440473	3.84 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	34

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Oil combustion		Residual oil-fired boiler, util/commerc/industr/residential	1	Chromium	7440473	21 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Oil combustion		Residual oil-fired boiler, util/commerc/industr/residential	1	Chromium	7440473	12.18 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Oil combustion		Residual oil-fired boiler, util/commerc/industr/residential	1	Chromium	7440473	6.09 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Oil combustion		Residual oil-fired boiler, util/commerc/industr/residential	1	Chromium	7440473	1.68 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	34
Oil combustion		Distillate oil-fired boiler, util/commerc/industr/residential	1	Copper	7440508	280 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Oil combustion		Distillate oil-fired boiler, util/commerc/industr/residential	1	Copper	7440508	168.2 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Oil combustion		Distillate oil-fired boiler, util/commerc/industr/residential	1	Copper	7440508	42 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34
Oil combustion		Distillate oil-fired boiler, util/commerc/industr/residential	1	Copper	7440508	25.2 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	34
Oil combustion		Residual oil-fired boiler, util/commerc/industr/residential	1	Copper	7440508	270 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	34
Oil combustion		Residual oil-fired boiler, util/commerc/industr/residential	1	Copper	7440508	145.2 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	34
Oil combustion		Residual oil-fired boiler, util/commerc/industr/residential	1	Copper	7440508	42.0 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	34

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Oil combustion		Residual oil-fired boiler, util/commerc/industr/residential	1	Copper	7440508	25.2 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Oil combustion		Oil-fired boiler or furnace, util/commerc/industr/residential	1	Formaldehyde	50000	405 lb/10E12 Btu	Uncontrolled, based on emissions testing	36
Oil combustion		Industrial, commercial, and residential boilers	1	Lead	7439921	8.9 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement, assumed use distillate oil	36
Oil combustion		Utility boiler	101004	Lead	7439921	28 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement, assumed use residual oil	36
Oil combustion		Distillate oil-fired boiler, util/commerc/industr/residential	1	Manganese	7439965	14 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Oil combustion		Distillate oil-fired boiler, util/commerc/industr/residential	1	Manganese	7439965	6.44 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Oil combustion		Distillate oil-fired boiler, util/commerc/industr/residential	1	Manganese	7439965	3.08 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36
Oil combustion		Distillate oil-fired boiler, util/commerc/industr/residential	1	Manganese	7439965	1.54 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Oil combustion		Residual oil-fired boiler, util/commerc/industr/residential	1	Manganese	7439965	26 lb/10E12 Btu	Uncontrolled, calculated based on engineering judgement	36
Oil combustion		Residual oil-fired boiler, util/commerc/industr/residential	1	Manganese	7439965	11.96 lb/10E12 Btu	Controlled with multiclone, calculated based on engineering judgement	36
Oil combustion		Residual oil-fired boiler, util/commerc/industr/residential	1	Manganese	7439965	5.72 lb/10E12 Btu	Controlled with ESP, calculated based on engineering judgement	36

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INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Oil combustion		Residual oil-fired boiler, util/comserc/industr/residential	1	Manganese	7439965	2.84 lb/10E12 Btu	Controlled with scrubber, calculated based on engineering judgement	36
Oil combustion		Distillate oil-fired boiler, util/comserc/industr/residential	1	Mercury	7439976	3.0 lb/10E12 Btu	Uncontrolled, based on engineering judgement	36
Oil combustion		Distillate oil-fired boiler, util/comserc/industr/residential	1	Mercury	7439976	3.0 lb/10E12 Btu	Controlled by multiclone, based on engineering judgement	36
Oil combustion		Distillate oil-fired boiler, util/comserc/industr/residential	1	Mercury	7439976	2.28 lb/10E12 Btu	Controlled by ESP, based on engineering judgement	36
Oil combustion		Distillate oil-fired boiler, util/comserc/industr/residential	1	Mercury	7439976	0.78 lb/10E12 Btu	Controlled by scrubber, based on engineering judgement	36
Oil combustion		Residual oil-fired boiler, util/comserc/industr/residential	1	Mercury	7439976	3.2 lb/10E12 Btu	Uncontrolled, based on engineering judgement	36
Oil combustion		Residual oil-fired boiler, util/comserc/industr/residential	1	Mercury	7439976	3.2 lb/10E12 Btu	Controlled by multiclone, based on engineering judgement	36
Oil combustion		Residual oil-fired boiler, util/comserc/industr/residential	1	Mercury	7439976	2.4 lb/10E12 Btu	Controlled by ESP, based on engineering judgement	36
Oil combustion		Residual oil-fired boiler, util/comserc/industr/residential	1	Mercury	7439976	0.83 lb/10E12 Btu	Controlled by scrubber, based on engineering judgement	36
Oil combustion		Distillate oil-fired boiler, util/comserc/industr/residential	1	Nickel	7440020	170 lb/10E12 Btu	Uncontrolled, based on engineering judgement	36
Oil combustion		Distillate oil-fired boiler, util/comserc/industr/residential	1	Nickel	7440020	84.7 lb/10E12 Btu	Controlled by multiclone, based on engineering judgement	36

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Oil combustion		Distillate oil-fired boiler, util/comserc/industr/residential	1	Nickel	7440020	47.4 lb/10E12 Btu	Controlled by ESP, based on engineering judgement	34
Oil combustion		Distillate oil-fired boiler, util/comserc/industr/residential	1	Nickel	7440020	6.8 lb/10E12 Btu	Controlled by scrubber, based on engineering judgement	34
Oil combustion		Residual oil-fired boiler, util/comserc/industr/residential	1	Nickel	7440020	1260 lb/10E12 Btu	Uncontrolled, based on engineering judgement	34
Oil combustion		Residual oil-fired boiler, util/comserc/industr/residential	1	Nickel	7440020	442.4 lb/10E12 Btu	Controlled by multiclone, based on engineering judgement	34
Oil combustion		Residual oil-fired boiler, util/comserc/industr/residential	1	Nickel	7440020	352.8 lb/10E12 Btu	Controlled by ESP, based on engineering judgement	34
Oil combustion		Residual oil-fired boiler, util/comserc/industr/residential	1	Nickel	7440020	90.4 lb/10E12 Btu	Controlled by scrubber, based on engineering judgement	34
Oil combustion		Cast iron sectional boilers, distillate oil	10300501	Polycyclic organic matter		34.8 lb/10E12 Btu	Uncontrolled, home heating application	114
Oil combustion		Distillate watertube boilers	10300501	Polycyclic organic matter		0.278 lb/10E12 Btu heat input	Uncontrolled	114
Oil combustion		Hot air furnace, distillate oil	10300501	Polycyclic organic matter		0.324 lb/10E12 Btu	Uncontrolled, same reference also lists <15.4 for same boiler/fuel type	114
Oil combustion		Scotch marine boilers, distillate oil	10300501	Polycyclic organic matter		41.04 lb/10E12 Btu	Uncontrolled	114
Oil combustion	49	Flue gas	1	2,3,7,8-Tetrachlorodibenzofuran		Not detectable	Low ash, 2% sulfur oil, sampled after heat exch., before ESP, 2378-TCDD detec. limit=<0.67-<1.3ng/m3	119
Oil combustion	49	Boiler flue gas	1	2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	Not detectable	Low ash, 2% sulfur oil, sampled after heat exch., before ESP, 2378-TCDD detec. limit=<4.2-<7.9 ng/m3	119
Oil combustion, comserc		Scotch marine boilers, residual oil	10300401	Polycyclic organic matter		2.203 lb/10E12 Btu heat input	Uncontrolled, represents benzo(a)pyrene only	114

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Oil combustion, commercial		Tangential furnace, distillate oil	103005	Selenium	7782492	23.42 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	54
Oil combustion, commercial		Tangential furnace, residual oil	103004	Selenium	7782492	23.42 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	54
Oil combustion, commercial		Wall furnace, distillate oil	103005	Selenium	7782492	23.42 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	54
Oil combustion, commercial		Wall furnace, residual oil	103004	Selenium	7782492	23.42 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	54
Oil combustion, commercial		Distillate oil-fired tangential furnaces	103005	Vanadium	7440622	69.5 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	54
Oil combustion, commercial		Distillate oil-fired wall furnaces	103005	Vanadium	7440622	69.5 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	54
Oil combustion, commercial		Residual oil-fired tangential furnaces	103004	Vanadium	7440622	8487 lb/10E12 Btu	Uncontrolled, based on reported emissions and engineering judgement	54
Oil combustion, commercial		Residual oil-fired wall furnaces	103004	Vanadium	7440622	8487 lb/10E12 Btu	Uncontrolled, based on reported emissions and engineering judgement	54
Oil combustion, industrial		Oil-fired boiler	102005	Lead	7439921	0.00015 lbs/10E6 BTU heat input	Uncontrolled emissions, based on 1 test	189
Oil combustion, industrial		Steam atomized watertube, residual oil	10200401	Polycyclic organic matter		5.33 lb/10E12 Btu heat input	Uncontrolled, represents mostly particulate POM	114
Oil combustion, industrial		Watertube, residual oil	10200401	Polycyclic organic matter		1.46 lb/10E12 Btu heat input	Uncontrolled, represents both gaseous and particulate POM	114
Oil combustion, industrial		Tangential furnace	102	Selenium	7782492	4.63 lb/10E12 Btu	Controlled by scrubber, based on reported emissions data and engineering judgement	54
Oil combustion, industrial		Tangential furnace	102	Selenium	7782492	23.42 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	54
Oil combustion, industrial		Wall furnace	102	Selenium	7782492	4.63 lb/10E12 Btu	Controlled by scrubber, based on reported emissions data and engineering judgement	54
Oil combustion, industrial		Wall furnace	102	Selenium	7782492	23.42 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	54
Oil combustion, industrial		Tangential furnace	102	Vanadium	7440622	602.9 lb/10E12 Btu	Controlled by scrubber, based on reported emissions and engineering judgement	54
Oil combustion, industrial		Tangential furnace	102	Vanadium	7440622	3014 lb/10E12 Btu	Uncontrolled, based on reported emissions and engineering judgement	54

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INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Oil combustion, industrial		Wall furnace	102	Vanadium	7440622	402.9 lb/10E12 Btu	Controlled by scrubber, based on reported emissions and engineering judgement	54
Oil combustion, industrial		Wall furnace	102	Vanadium	7440622	3014 lb/10E12 Btu	Uncontrolled, based on reported emissions and engineering judgement	54
Oil combustion, residential		Distillate oil-fired furnaces		Sele..um	7782492	6.72 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	54
Oil combustion, residential		Distillate oil-fired boiler, util/commerc/industr/residential		Vanadium	7440622	23.42 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	54
Oil combustion, utility		Face-fired, residual oil	10100401	Polycyclic organic matter		0.858 lb/10E12 Btu heat input	Uncontrolled, represents both gaseous and particulate POM	114
Oil combustion, utility		Tangential-fired, residual oil	10100404	Polycyclic organic matter		8.79 lb/10E12 Btu heat input	Cyclone controls, represents both gaseous and particulate POM	114
Oil combustion, utility		Wall-fired, residual oil	10100401	Polycyclic organic matter		9.04 lb/10E12 Btu heat input	Uncontrolled, ave. of 4 values ranging from 0.45-12.3 ng/J, represents gaseous & particulate POM	114
Oil combustion, utility	491	Oil-fired utility boiler	101004	Sulfuric acid	7664939	8.5 x % sulfur in fuel ng/J	Controlled emissions, FGD system with SOX efficiency for sulfuric acid mist	213
Oil combustion, utility	491	Oil-fired utility boiler	101004	Sulfuric acid	7664939	16.9 x % sulfur in fuel ng/J	Uncontrolled emissions	213
Oil combustion, utility	4911	Tangential-fired, residual oil	101004	Selenium	7782492	4.638 lb/10E12 Btu	Controlled by ESP, based on reported emissions data and engineering judgement	54
Oil combustion, utility	4911	Tangential-fired, residual oil	101004	Selenium	7782492	23.42 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	54
Oil combustion, utility	4911	Wall furnace, residual oil	101004	Selenium	7782492	4.638 lb/10E12 Btu	Controlled by ESP, based on reported emissions data and engineering judgement	54
Oil combustion, utility	4911	Wall furnace, residual oil	101004	Selenium	7782492	23.42 lb/10E12 Btu	Uncontrolled, based on reported emissions data and engineering judgement	54
Oil combustion, utility	4911	Residual oil-fired tangential furnaces	101004	Vanadium	7440622	702.6 lb/10E12 Btu	Controlled by ESP, based on reported emissions and engineering judgement	54
Oil combustion, utility	4911	Residual oil-fired tangential furnaces	101004	Vanadium	7440622	3515 lb/10E12 Btu	Uncontrolled, based on reported emissions and engineering judgement	54
Oil combustion, utility	4911	Residual oil-fired wall furnaces	101004	Vanadium	7440622	702.6 lb/10E12 Btu	Controlled by ESP, based on reported emissions and engineering judgement	54
Oil combustion, utility	4911	Residual oil-fired wall furnaces	101004	Vanadium	7440622	3515 lb/10E12 Btu	Uncontrolled, based on reported emissions and engineering judgement	54

EMISSION FACTORS

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Oil shale retorting	1311	Entire process		Mercury	7439976	2.2 x 10E-6 lbs/barrel oil produced	Includes Hg compound form, assumes fac. using 13,000 tons/day raw shale to prod. 12,000 bbl/day oil	40
Oil shale retorting	1311	Modified in situ retort		Polycyclic organic matter		0.0073 lb/hr	Based on offgas concentration and flow rate	114
Open burning		Area source	50300201	Acetaldehyde	75070	0.72 - 1.44 lb/ton wood burned	Estimated from a total aldehyde value of 10.4 lb/ton	130
Open burning		Automobile body burning	50300203	Polycyclic organic matter		0.22 lb/ton waste	Based on concentration measured in waste plume	114
Open burning		Automobile tire burning	50300203	Polycyclic organic matter		0.48 lb/ton waste	Based on concentration measured in waste plume	114
Open burning		Grass, leaves, branches	50300201	Polycyclic organic matter		0.005 - 0.0184 lb/ton waste	Based on concentration measured in waste plume	114
Open burning		Leaf burning	50300201	Polycyclic organic matter		0.02 - 0.044 lb/ton leaves	Based on lab tests	114
Open burning		Municipal refuse open burning	50300202	Polycyclic organic matter		0.001 - 0.0094 lb/ton waste	Based on concentration measured in waste plume	114
Oxybisphenoxarsine and 1,3-diisocyanate production	2899	Deaeration of aqueous waste		Chloroform	67663	0.0022 lb/s	Uncontrolled	160
Oxybisphenoxarsine production	2899	Plantwide emissions		Chloroform	67663	0.0018 lb/s	Carbon adsorption	160
Paint and coating application		Entire process	402	Tetrachloroethylene	127184	2000 lb/ton PCE in paint or coating appl	Uncontrolled, based on engineering judgement	48
Paint and coating application		Entire process	40200101	Toluene	108883	2000 lb/ton used	Assume all toluene is eventually released to atmosphere	13
Paint and coating application		Entire process	402	Trichloroethylene	79016	2000 lb/ton TCE in paint or coating appl	Uncontrolled, based on engineering judgement	105
Paint and coating application	1721	End use	402	Xylenes (mixed isomers)	1330207	2000 lb/ton xylene consumed	Engineering judgement	77
Paint and coating manufacture	28	Xylene solvent	301014	Xylenes (mixed isomers)	1330207	40.4 lb/ton xylene consumed		67
Paint application		Entire process	402	Mercury	7439976	1310 lb/ton of contained Hg	Uncontrolled, based on engineering judgement	113
Paint application		Coating application of solvent-based paints	40200101	Xylenes (mixed isomers)	1330207	1740 lb/ton xylene used	Estimated	13
Paint stripper formulation	2851	Entire process	301	Methylene chloride	75092	100 lb/ton of MC consumed	Uncontrolled, based on aggregate estimates of emissions and consumption at formulation facilities	157

EMISSION FACTORS

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Paint stripping		Dip tanks at durable goods manufacturers	402	Methylene chloride	75092	1200 lb/ton MC contained in stripper use	Uncontrolled, based on material balances for 3 auto manufac. facilities & 1 aircraft maint. facility	157
Paint stripping		Dip tanks at durable goods manufacturers	402	Methylene chloride	75092	400 lb/ton MC contained in stripper used	Controlled by water seal and 15 sec. drain time, assumes 60% emission reduction	157
Paint stripping		Floor stripping	402	Methylene chloride	75092	2000 lb/ton MC contained in stripper use	Uncontrolled, based on questionnaire responses for auto plants and engineering judgement	157
Paint stripping		General emissions	401	Methylene chloride	75092	2000 lb/ton used	Assume all is eventually released to atmosphere	13
Paint stripping	3711	Spray booth maintenance at automobile assembly plants	40201405	Methylene chloride	75092	1400 lb/ton MC contained in stripper use	Uncontrolled, based on questionnaire responses and engineering judgement	157
Paint stripping	45	Aircraft (military and commercial)	490	Methylene chloride	75092	1400 lb/ton MC contained in stripper use	Uncontrolled, based on material balances for 2 commercial aircraft maintenance facilities	157
Paint stripping	7641	Furniture stripping (household and commercial)	490	Methylene chloride	75092	2000 lb/ton MC contained in stripper use	Uncontrolled, based on engineering judgement	157
Paint stripping	9711	Dip tanks at military installations	490	Methylene chloride	75092	800 lb/ton MC contained in stripper used	Uncontrolled, based on material balances for 3 military installations using dip tanks	157
Paper coating	267	Coating line	40201301	Acetone	67641	2.05 x 10-4 lb/ft paper coated	Based on one sampling program, sampled at discharge of afterburner	11
Paper coating	267	Coating line	40201301	Methyl ethyl ketone	78933	8.01 x 10E-5 lb/ft paper coated	Based on one sampling program, sampled at discharge of afterburner	11
Paper coating	267	Coating line	40201301	Naphthalene	91203	9.6 x 10-7 lb/ft paper coated	Based on one sampling program, sampled at discharge of afterburner	11
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	0.39 lb/msf @ 3/4"	Survey of german praticle board plants, average	211
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	0.22 - 0.84 lb/msf @ 3/4"	Survey of four plants by Nat'l Council for Air & Stream Improvement press tem: 319-389, Excess HCHO in resin:3.2-7.7 wt%	211
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	0.57 lb/msf @ 3/4"	Survey of 4 pits by Nat'l Council for Air & Stream Improvement, aver.press temp: 329F, Excess HCHO in resin:5.9- wt %	211
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	0.53 lb/msf @ 3/4"	% Resin(lb/100 lb board) 7.3, time: 4.8-8.7 min/pres. temp 320F, Excess HCHO in resin:6.7- wt %, 1 pit uncontrolled	211
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	0.41 - .45 lb/msf @ 3/4"	% Resin(lb/100 lb board) 7.1, time: 4.8-8.7 min/pres. temp 320F, Excess HCHO in resin:6.7- wt %, 1 pit uncontrolled	211

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	0.61 lb/msf @ 3/4"	% Resin(lb/100 lb board) 4.1, time: 4.0-8.7 min/pres, temp 320F, Excess HCHO in resin:6.7- wt %, 1 plt uncontrolled	211
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	0.87 lb/msf @ 3/4"	% Resin(lb/100 lb board) 5.9, time: 4.0-8.7 min/pres, temp 320F, Excess HCHO in resin:6.7 wt %, 1 plt uncontrolled	211
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	0.35 - 0.38 lb/msf @ 3/4"	% Resin(lb/100 lb board) 5.2-5.7, time: 4.0-8.7 min/pres, temp 320F, Excess HCHO in resin:6.7 wt %, 1 plt uncontred	211
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	0.39 lb/msf @ 3/4"	% Resin(lb/100 lb board) 6.2, time: 4.0-8.7 min/pres, temp 320F, Excess HCHO in resin:6.7 wt %, 1 plt uncontred	211
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	0.31 lb/msf @ 3/4"	% Resin(lb/100 lb board) 5.7, time: 4.0-8.7 min/pres, temp 320F, Excess HCHO in resin:6.7 wt %, 1 plt uncontred	211
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	0.25 lb/msf @ 3/4"	% Resin(lb/100 lb board) 6.1, time: 4.0-8.7 min/pres, temp 320F, Excess HCHO in resin:6.7 wt %, 1 plt uncontred	211
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	0.59 lb/msf @ 3/4"	% Resin(lb/100 lb board) 8.8, time: 6.1-8.6 min/pres, temp 360F, Excess HCHO in resin: 7.7 wt %, 1 plt uncontred	211
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	0.74 lb/msf @ 3/4"	% Resin(lb/100 lb board) 8.6, time: 6.1-8.6 min/pres, temp 360F, Excess HCHO in resin: 7.7 wt %, 1 plt uncontred	211
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	0.62 lb/msf @ 3/4"	% Resin(lb/100 lb board) 8.0, time: 6.1-8.6 min/pres, temp 360F, Excess HCHO in resin: 7.7 wt %, 1 plt uncontred	211
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	0.84 lb/msf @ 3/4"	% Resin(lb/100 lb board) 8.0, time: 6.1-8.6 min/pres, temp 360F, Excess HCHO in resin: 7.7 wt %, 1 plt uncontred	211
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	0.22 - 0.33 lb/msf @ 3/4"	% Resin(lb/100 lb board) 8.6, time: 4.3-4.9 min/pres, temp 320F, Excess HCHO in resin: 3.2 wt %, 1 plt uncontred	211
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	0.31 - 0.35 lb/msf @ 3/4"	% Resin(lb/100 lb board) 9.1, time: 4.3-4.9 min/pres, temp 320F, Excess HCHO in resin: 3.2 wt %, 1 plt uncontred	211
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	0.45 - 0.49 lb/msf @ 3/4"	% Resin(lb/100 lb board) 9.9, time: 4.3-4.9 min/pres, temp 320F, Excess HCHO in resin: 3.2 wt %, 1 plt uncontred	211

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	0.79 - 0.81 lb/msf @ 3/4"	% Resin(lb/100 lb board)10.0, time: 4.3-4.9 min/proc, temp 320F, Excess HCHO in resin: 3.2 wt %, 1 plt uncontrol	211
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	0.50 lb/msf @ 3/4"	% Resin(lb/100 lb board) 6.9, temp 315F, Excess HCHO in resin: 5.9 wt %, 1 plt uncontrol	211
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	0.44 - 0.51 lb/msf @ 3/4"	% Resin(lb/100 lb board) 6.9, temp 305F, Excess HCHO in resin: 5.9 wt %, 1 plt uncontrol	211
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	2.1 lb/msf @ 3/4"	% Resin(lb/100 lb board) 30, temp 284F, Excess HCHO in resin: 0.4 wt %, 1 plt uncontrol	211
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	1.8 lb/msf @ 3/4"	% Resin(lb/100 lb board) 30, temp 284F, Excess HCHO in resin: 0.5 wt %, 1 plt uncontrol	211
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	1.2 lb/msf @ 3/4"	% Resin(lb/100 lb board) 31, temp 284F, Excess HCHO in resin: 0.6 wt %, 1 plt uncontrol	211
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	2.2 lb/msf @ 3/4"	% Resin(lb/100 lb board) 31, temp 284F, Excess HCHO in resin: 0.6 wt %, 1 plt uncontrol	211
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	3.2 lb/msf @ 3/4"	% Resin(lb/100 lb board) 31, temp 284F, Excess HCHO in resin: 2.8 wt %, 1 plt uncontrol	211
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	4.0 lb/msf @ 3/4"	% Resin(lb/100 lb board) 32, temp 284F, Excess HCHO in resin: 4.0 wt %, 1 plt uncontrol	211
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	4.9 lb/msf @ 3/4"	% Resin(lb/100 lb board) 31, temp 284F, Excess HCHO in resin: 5.7 wt %, 1 plt uncontrol	211
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	2.4 lb/msf @ 3/4"	% Resin(lb/100 lb board) 0.4, temp 338F, Excess HCHO in resin: 30 wt %, 1 plt uncontrol	211
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	2.8 lb/msf @ 3/4"	% Resin(lb/100 lb board) 0.5, temp 338F, Excess HCHO in resin: 30 wt %, 1 plt uncontrol	211
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	3.4 lb/msf @ 3/4"	% Resin(lb/100 lb board) 0.6, temp 338F, Excess HCHO in resin: 31 wt %, 1 plt uncontrol	211

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	2.4 lb/msf @ 3/4"	% Resin(lb/100 lb board) 0.4, temp 338F, Excess HCHO in resin: 31 wt %, 1 plt uncontrol	211
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	3.1 lb/msf @ 3/4"	% Resin(lb/100 lb board) 1.4, temp 338F, Excess HCHO in resin: 31 wt %, 1 plt uncontrol	211
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	5.9 lb/msf @ 3/4"	% Resin(lb/100 lb board) 2.8, temp 338F, Excess HCHO in resin: 31 wt %, 1 plt uncontrol	211
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	7.1 lb/msf @ 3/4"	% Resin(lb/100 lb board) 4.0, temp 338F, Excess HCHO in resin: 32 wt %, 1 plt uncontrol	211
Particle board manufacturing-wood processing	2493	Process vents	30700703	Formaldehyde	50000	9.5 lb/msf @ 3/4"	% Resin(lb/100 lb board) 5.7, temp 338F, Excess HCHO in resin: 31 wt %, 1 plt uncontrol	211
Paved roads		Dust reentrainment		Lead	7439921	6.61 x 10E-5 lb/vehicle mile	Calculated based on data available for 1975-1976	122
Paved roads		Entire source		Lead	7439921	1.432 x 10E-4 lb/vehicle mile	Based on field measurements for 1975-1976	122
Paved roads		Vehicle exhaust		Lead	7439921	4.41 x 10E-6 lb/vehicle mile	Projected emission factor for 1990, calculated based on composite vehicle operation	122
Pentachlorophenol production	2879	General emissions	301033	Pentachlorophenol (PCP)	87865	1.1 lb/ton active ingredient	Control unknown, based on industry estimates	16
Pentachlorophenol production	2879	General emissions	301033	Phenol	108952	2.0 lb/ton active ingredient	Control unknown, based on industry estimates	16
Pentaerythritol production	2869	Formaldehyde storage	407	Formaldehyde	50000	0.004-0.66 lb/ton of 37% formal. used	No information was available on the basis of these estimates or the types of control involved	106
Pentaerythritol production	2869	Process - general	301250	Formaldehyde	50000	2.6-5.4 lb/ton of 37% formaldehyde used	No information was available on the basis of these estimates or the types of control involved	106
Perchloroethylene and trichloroethylene production	2869	Wastewater stripper	301125	Chloroform	67663	0.24 lb/ton perchloroethylene produced	Controlled with 2 condensers, may not apply to all PCE/TCE plants, see reference	164
Perchloroethylene and trichloroethylene production	2869	Oxychlorination process, distillation vent	301125	1,2-Dichloroethylene, (e)-	156605	0.45 lb/ton of PCE and TCE produced	Uncontrolled, based on data from one producer	1
Perchloroethylene and trichloroethylene production	2869	Oxychlorination process, drying column vent	301125	1,2-Dichloroethylene, (e)-	156605	1.3 lb/ton of PCE and TCE produced	Uncontrolled, based on data from one producer	1

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Perchloroethylene and trichloroethylene production	2869	Oxychlorination process, distillation vent	301125	1,2-Dichloroethylene, (z)-	156592	0.126 lb/ton of PCE and TCE produced	Uncontrolled, based on data from one producer	1
Perchloroethylene and trichloroethylene production	2869	Oxychlorination process, distillation vent	301125	Tetrachloroethylene	127184	0.15 lb/ton of PCE and TCE produced	Uncontrolled, based on data from one producer	70
Perchloroethylene and trichloroethylene production	2869	Oxychlorination process, drying coluen vent	301125	Tetrachloroethylene	127184	0.015 lb/ton of PCE and TCE produced	Factor includes TCE emissions, uncontrolled, based on data from one producer	70
Perchloroethylene and trichloroethylene production	2869	Process vents, oxychlorination process	30112520	Tetrachloroethylene	127184	0.002 lb/ton production capacity	One plant, based on est annual emis divided by PCE & TCE production capacity, control with scrubber	208
Perchloroethylene and trichloroethylene production	2869	Storage in fixed roof tanks, oxychlorination process	30112520	Tetrachloroethylene	127184	0.20 lb/ton PCE & TCE production capacity	One plant, based on est annual emis divided by PPE & TRE production capacity, control by condenser of none	208
Perchloroethylene and trichloroethylene production	2869	Handling, oxychlorination process	30112520	Tetrachloroethylene	127184	0.014 lb/ton PCE & TCE prod capacity	One plant, based on est annual emis divided by PCE & TCE production capacity, controlled by submerged fill pipe	208
Perchloroethylene and trichloroethylene production	2869	Process fugitive, oxychlorination process	30112524	Tetrachloroethylene	127184	25.9 ton/yr	One plant, based on average emission factor method for estimating emissions, uncontrolled	208
Perchloroethylene and trichloroethylene production	2869	Equipment openings, oxychlorination process	30112524	Tetrachloroethylene	127184	0.004 lb/ton PCE & TCE prod capacity	One plant, based on est annual emis divided by PCE & TCE prod capacity, purged, washed, or cleaned prior to opening	208
Perchloroethylene and trichloroethylene production	2869	Relief device, oxychlorination process	30112520	Tetrachloroethylene	127184	0.002 lb/ton PCE & TCE prod capacity	One plant, based on est annual emis divided by PCE & TCE prod capacity, uncontrolled	208
Perchloroethylene and trichloroethylene production	2869	Oxychlorination process, distillation vent	301125	Trichloroethylene	79016	0.15 lb/ton PCE & TCE produced	Uncontrolled, based on data from one producer	104
Perchloroethylene and trichloroethylene production	2869	Oxychlorination process, drying coluen vent	301125	Trichloroethylene	79016	0.015 lb/ton PCE & TCE produced	Emis. factor may include PCE emis., control status unspecified, based on data for one plant	104
Perchloroethylene and trichloroethylene production	2869	Process vents, oxychlorination process	30112530	Trichloroethylene	79016	0.024 lb/ton PCE & TCE prod capacity	One plant, based on estimated annual emissions divided by PCE & TCE prod capacity, scrubber control	208
Perchloroethylene and trichloroethylene production	2869	Storage - fixed roof tank, oxychlorination process	30112530	Trichloroethylene	79016	0.281 lb/ton PCE & TCE prod capacity	One plant, based on estimated annual emissions divided by PCE & TCE prod capacity, condenser control w/75% efficiency	208

EMISSION

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Perchloroethylene and trichloroethylene production	2869	Handling, oxychlorination process	30112530	Trichloroethylene	79016	0.0601 lb/ton PCE & TCE prod capacity	One plant, based on estimated annual emissions divided by PCE & TCE prod capacity, controlled by submerged fill pipe	208
Perchloroethylene and trichloroethylene production	2869	Process fugitive, oxychlorination process	30112534	Trichloroethylene	79016	35.38 ton/yr	One plant, based on average emission factor method for estimating equipment leaks	208
Perchloroethylene and trichloroethylene production	2869	Equipment openings, oxychlorination process	30112534	Trichloroethylene	79016	0.032 lb/ton PCE & TCE prod capacity	One plant, based on est annual emis divided by PCE & TCE prod cap, control by purge, wash or clean prior to opening	208
Perchloroethylene and trichloroethylene production	2869	Relief device, oxychlorination process	30112534	Trichloroethylene	79016	0.0004 lb/ton PCE & TCE prod capacity	One plant, based on estimated annual emissions divided by PCE & TCE production capacity, uncontrolled	208
Perchloroethylene and trichloroethylene production	2869	Secondary, oxychlorination process	30112530	Trichloroethylene	79016	0.0781 lb/ton PCE & TCE prod capacity	One plant, based on estimated annual emissions divided by PCE & TCE production capacity, uncontrolled	208
Perchloroethylene and trichloroethylene production	2869	Oxychlorination process, drying coluen vent	301125	Vinyl chloride	75014	1.04 lb/ton of PCE and TCE produced	Uncontrolled, based on data from one producer	70
Perchloroethylene and trichloroethylene production	2869	Chlorination process, distillation vents	30112531	Vinylidene chloride	75354	0.212 lb/ton PCE and TCE produced	Uncontrolled	165
Perchloroethylene and trichloroethylene production	2869	Chlorination process, distillation vents	30112531	Vinylidene chloride	75354	0.042 lb/ton PCE and TCE produced	Refrigerated condenser (80%)	165
Perchloroethylene and trichloroethylene production	2869	Chlorination process, neutralization and drying vent	30112532	Vinylidene chloride	75354	5.0 lb/ton PCE and TCE produced	Uncontrolled, based on published data from indiv. plants and general processing techniques	165
Perchloroethylene and trichloroethylene production	2869	Chlorination process, neutralization and drying vent	30112532	Vinylidene chloride	75354	1.0 lb/ton PCE and TCE produced	Refrigerated condenser (80%)	165
Perchloroethylene and trichloroethylene production	2869	Oxychlorination process, distillation vent	30112521	Vinylidene chloride	75354	0.196 lb/ton PCE and TCE	Uncontrolled	165
Perchloroethylene and trichloroethylene production	2869	Oxychlorination process, distillation vent	30112521	Vinylidene chloride	75354	0.04 lb/ton PCE and TCE	Aqueous scrubber	165
Perchloroethylene and trichloroethylene production	2869	Oxychlorination process, drying coluen vent	301125	Vinylidene chloride	75354	0.8 lb/ton PCE and TCE	Uncontrolled	165

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Perchloroethylene and trichloroethylene production	2869	Oxychlorination process, drying column vent	301125	Vinylidene chloride	75354	<0.016 lb/ton PCE and TCE	Thermal oxidation	145
Perchloroethylene and trichloroethylene production	2869	Oxychlorination process, reactor vent	301129	Vinylidene chloride	75354	7.4 lb/ton PCE and TCE produced	Uncontrolled	145
Perchloroethylene and trichloroethylene production	2869	Oxychlorination process, reactor vent	301129	Vinylidene chloride	75354	<0.152 lb/ton PCE and TCE produced	Thermal oxidation	145
Perchloroethylene production	2869	Chlorination of ethylene dichloride proc/distillation vent	30112521	Carbon tetrachloride	56235	0.092 lb/ton of PCE produced	Uncontrolled, based on data from one producer	1
Perchloroethylene production	2869	Chlorination of ethylene dichloride proc/neutralize & drying area vent	30112520	Carbon tetrachloride	56235	0.128 lb/ton of PCE produced	Uncontrolled, based on data from one producer	1
Perchloroethylene production	2869	Chlorination of ethylene dichloride proc/neutralize & drying area vent	30112520	1,2-Dichloroethane	107062	6.2 lb/ton of PCE produced	Uncontrolled, based on data from one producer	70
Perchloroethylene production	2869	Chlorination or oxychlorination process	30112520	1,2-Dichloroethane	107062	10 lb/ton PCE produced	Controlled, aggregate estimate based on national emissions and production estimates	51
Perchloroethylene production	2869	Hydrocarbon chlorinolysis process, hcn waste handling	30112520	1,2-Dichloroethane	107062	0.052 lb/ton PCE and CCl4 produced	Uncontrolled, based on hypothetical plant producing 1.1 x 10E8 lb/yr PCE & 4.4 x 10E7 lb/yr CCl4	51
Perchloroethylene production	2869	Hydrocarbon chlorinolysis process, hcn waste handling	30112520	1,2-Dichloroethane	107062	0.00052 lb/ton PCE and CCl4 produced	Contr=vapor bal. eve. & carbon adsor./hypothet. plant prod. 1.1x10E8 lb/yr PCE & 4.4x10E7 lb/yr CCl4	51
Perchloroethylene production	2869	Chlorination of ethylene dichloride proc/distillation vent	30112521	1,2-Dichloroethylene, (e)-	156605	0.15 lb/ton of PCE produced	Uncontrolled, based on data from one producer	1
Perchloroethylene production	2869	Chlorination of ethylene dichloride proc/neutralize & drying area vent	30112520	1,2-Dichloroethylene, (e)-	156605	2.2 lb/ton of PCE produced	Uncontrolled, based on data from one producer	1
Perchloroethylene production	2869	Chlorination of ethylene dichloride proc/distillation vent	30112521	1,2-Dichloroethylene, (z)-	156592	0.086 lb/ton of PCE produced	Uncontrolled, based on data from one producer	1
Perchloroethylene production	2869	Chlorination of ethylene dichloride proc/neutralize & drying area vent	30112520	1,2-Dichloroethylene, (z)-	156592	0.58 lb/ton of PCE produced	Uncontrolled, based on data from one producer	1

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Perchloroethylene production	2869	Chlorination of ethylene dichloride proc/distillation vent	30112521	Tetrachloroethylene	127184	0.198 lb/ton of PCE produced	Uncontrolled, based on data from one producer	70
Perchloroethylene production	2869	Chlorination of ethylene dichloride proc/neutralize & drying area vent	30112520	Tetrachloroethylene	127184	1.0 lb/ton of PCE produced	Uncontrolled, based on data from one producer	70
Perchloroethylene production	2869	Secondary, hydrocarbon chlorinolysis	30112520	Tetrachloroethylene	127184	0.016 lb/ton production capacity	Avg. of five plants, based on estimated annual emissions divided by PCE production capacity, unknown control, range is 0.0050 - 0.026 lb/ton	208
Perchloroethylene production	2869	Equipment openings, hydrocarbon chlorinolysis	30112520	Tetrachloroethylene	127184	0.04 lb/ton production capacity	Avg. of five plants,based on estimated annual emissions divided by PCE production capacity, unknown control, range is 0.00012 - 0.108 lb/ton	208
Perchloroethylene production	2869	Process fugitive, hydrocarbon chlorinolysis	30112524	Tetrachloroethylene	127184	14.99 - 44 tons/yr	Four plants, based on average emission factor method for estimating equipment leaks, unknown control	208
Perchloroethylene production	2869	Process fugitive, hydrocarbon chlorinolysis	30112524	Tetrachloroethylene	127184	0.451 tons/yr	One plant, based on emission testing, unknown control	208
Perchloroethylene production	2869	Handling, hydrocarbon chlorinolysis	30112520	Tetrachloroethylene	127184	0.12 lb/ton production capacity	Avg of five plants, based on est annual emis divided by PCE production cap., controlled w/submerged fill pipe, range is 0.06 - 1.78 lb/ton	208
Perchloroethylene production	2869	Storage, hydrocarbon chlorinolysis	30112520	Tetrachloroethylene	127184	0.8 lb/ton production capacity	Avg of five plants, based on estimated annual emissions divided by PCE production capacity, unknown control, range is 0.026 - 1.38 lb/ton	208
Perchloroethylene production	2869	Process vents, hydrocarbon chlorinolysis	30112520	Tetrachloroethylene	127184	0.12 lb/ton production capacity	Avg of five plants, based on estimated annual emissions divided by PCE production capacity, unknown control, range is 0.00008 - 0.40 lb/ton	208
Perchloroethylene production - EDC chlorination	2869	Distillation column	30112521	Carbon tetrachloride	56235	0.054 lb/ton PCE produced	Uncontrolled	163
Perchloroethylene production - EDC chlorination	2869	Drying column	30112520	Carbon tetrachloride	56235	0.126 lb/ton PCE produced	Uncontrolled	163
Perchloroethylene production - EDC chlorination	2869	Drying column	30112520	Carbon tetrachloride	56235	0.010 lb/ton PCE produced	Condenser	163
Perchloroethylene production - EDC chlorination	2869	Light ends/heavy ends mixtant	301129	Carbon tetrachloride	56235	0.22 lb/ton PCE produced	Uncontrolled	163

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Perchloroethylene production - EDC chlorination	2869	Light ends/heavy ends mix tank	301125	Carbon tetrachloride	56235	0.044 lb/ton PCE produced	Condenser	143
Perchloroethylene production - EDC chlorination	2869	Neutralization	30112522	Carbon tetrachloride	56235	0.032 lb/ton PCE produced	Uncontrolled	143
Perchloroethylene production - EDC chlorination	2869	Process fugitive emissions	30112524	Carbon tetrachloride	56235	6.2 lb/hr	Uncontrolled	143
Perchloroethylene production - ETC chlorination	2869	Storage - light ends	407040	Carbon tetrachloride	56235	0.22 lb/ton PCE produced	Uncontrolled	143
Perchloroethylene production - EDC chlorination	2869	Storage - light ends	407040	Carbon tetrachloride	56235	0.0024 lb/ton PCE produced	Condenser	143
Perchloroethylene production - EDC chlorination	2869	Secondary sources (wastewater, etc.)	30112520	Tetrachloroethylene	127184	0.0010 lb/ton production capacity	Avg of two plants, based on estimated annual emissions divided by PCE production capacity, unknown control, range is 0.0 - 0.002 lb/ton	208
Perchloroethylene production - EDC chlorination	2869	Equipment openings	30112520	Tetrachloroethylene	127184	0.006 lb/ton production capacity	One plant, based on estimated annual emissions divided by PCE production capacity, uncontrolled	208
Perchloroethylene production - EDC chlorination	2869	Process fugitive emissions	30112524	Tetrachloroethylene	127184	121 tons/yr	Average of two plants, based on average emission factor method for estimating equipment leaks, unknown control, range is 88 - 152 ton/yr	208
Perchloroethylene production - EDC chlorination	2869	Handling	30112520	Tetrachloroethylene	127184	0.052 lb/ton production capacity	Avg of two plants, based on est annual emis divided by PCE production cap., controlled w/submerged fill pipe, range is 0.002 - 0.102 lb/ton	208
Perchloroethylene production - EDC chlorination	2869	Storage	30112520	Tetrachloroethylene	127184	1.24 lb/ton production capacity	Avg of two plants, based on est annual emis divided by PCE production capacity, unknown control, range is 0.48 - 2.0 lb/ton	208
Perchloroethylene production - EDC chlorination	2869	Process vents	30112520	Tetrachloroethylene	127184	0.42 lb/ton production capacity	Average of two plants, based on est annual emis divided by PCE production capacity, unknown control, range is 0.24 - 0.58 lb/ton	208
Perchloroethylene production by chlorination process	2869	Distillation vent	30112521	Trichloroethylene	79016	0.112 lb/ton PCE produced	Control status unspecified, based on data from one plant	104
Perchloroethylene production by chlorination process	2869	Neutralization and drying area vent	30112520	Trichloroethylene	79016	0.22 lb/ton PCE produced	Control status unspecified, based on data from one plant	104

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Pesticide application	9191	End use		Xylenes (mixed isomers)	1330207	2000 lb/ton xylene consumed	Engineering judgement	77
Pesticide intermediates manufacture - Dicamba	2879	Fugitives and handling emissions	301033	1,2,4-Trichlorobenzene	120821	20 lbs/ton pesticide produced	Based on emissions estimate of <1% lost total production	48
Pesticide intermediates manufacture - Stirofos	2879	Fugitives and handling emissions	301033	1,2,4-Trichlorobenzene	120821	20 lbs/ton pesticide produced	Based on emissions estimate of <1% lost total production	48
Pesticide manufacturing	2879	All sources	31033	Carbon tetrachloride	56235	940 lb/ton CCl4 used	CCl4 not used in all pesticide production	134
Pesticide manufacturing	2879	Fugitive emissions	301033	1,2,3,4,5,5-Hexachloro-1,3-cyclopentadiene	77474	0.25 lb/ton used	Based on engineering judgement	13
Pesticide manufacturing	2879	Process - general	301033	1,2,3,4,5,5-Hexachloro-1,3-cyclopentadiene	77474	0.65 lb/ton used	Based on engineering judgement	13
Pesticide manufacturing	2879	Storage	301033	1,2,3,4,5,5-Hexachloro-1,3-cyclopentadiene	77474	0.10 lb/ton used	Based on engineering judgement	13
Petrochemical production	286	Pumps	301	Benzene	71432	3.96 lb/hr	Uncontrolled, estimated emissions from an average plant	172
Petrochemical production	286	Pipeline valves-gas	301	Benzene	71432	4.21 lb/hr	Uncontrolled, estimated emissions from an average plant	172
Petrochemical production	286	Pipeline valves-liquid	301	Benzene	71432	3.70 lb/hr	Uncontrolled, estimated emissions from an average plant	172
Petrochemical production	286	Safety/relief valves	301	Benzene	71432	3.17 lb/hr	Uncontrolled, estimated emissions from an average plant	172
Petrochemical production	286	Open-ended valves-gas	301	Benzene	71432	0.485 lb/hr	Uncontrolled, estimated emissions from an average plant	172
Petrochemical production	286	Open-ended valves-liquid	301	Benzene	71432	3.79 lb/hr	Uncontrolled, estimated emissions from an average plant	172
Petrochemical production	286	Sample connections	301	Benzene	71432	9.86 lb/hr	Uncontrolled, estimated emissions from an average plant	172
Petrochemical production	286	Flanges	301	Benzene	71432	0.35 lb/hr	Uncontrolled, estimated emissions from an average plant	172
Petrochemical production	286	Drain	301	Benzene	71432	1.08 lb/hr	Uncontrolled, estimated emissions from an average plant	172
Petroleum refinery	2911	Fluidized bed catalytic cracker unit regenerator	30600201	Aldehydes		0.054 kg/m^3 of fresh fuel throughput	Uncontrolled emissions	185
Petroleum refinery	2911	Fluidized catalytic cracking unit	30600201	Ammonia	7664417	1.29 lb/10E3 gal fresh feed	Uncontrolled	97, 185
Petroleum refinery	2911	Fluidized catalytic cracking unit	30600201	Ammonia	7664417	Negligible	Controlled by electrostatic precipitator and CO boiler	97
Petroleum refinery	2911	Reciprocating compressor engines	20200202	Ammonia	7664417	0.2 lbs/1000 cubic feet gas burned	Sources emitting > 100 tons NH3/year	97, 179
Petroleum refinery	2911	Fluidized bed catalytic cracker unit regenerator	30600201	Benzo(a)pyrene	50328	0.48 lb/1000 barrels of feed	Uncontrolled	148

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Petroleum refinery	2911	Fluidized bed catalytic cracker unit regenerator	30600201	Benzo(a)pyrene	50328	3.11 x 10E-8 lb/1000 barrels of feed	Controlled by CO boiler	148
Petroleum refinery	2911	Fluidized catalytic cracking unit, fugitives	304	Biphenyl	92524	0.006 lb/hr	Based on weighted emission stream content	92
Petroleum refinery	2911	Fluidized bed catalytic cracker unit regenerator	30600201	Carbon monoxide	630080	39.2 kg/m^3 of fresh fuel throughput	Uncontrolled emissions	185
Petroleum refinery	2911	Fluidized catalytic cracking unit, fugitives	304	Ethylbenzene	100414	0.877 lb/hr	Based on weighted emission stream content	92
Petroleum refinery	2911	Fluid coker burner	30401201	Formaldehyde	50000	1.19 lb/1000 bbl fresh feed	Controlled with CO boiler/ESP, derived from emission test data for total aldehydes	104
Petroleum refinery	2911	Fluidized bed catalytic cracker unit regenerator	30600201	Formaldehyde	50000	4.86 lb/1000 bbl fresh feed	Controlled with CO boiler/ESP, derived from emission test data for total aldehydes	104
Petroleum refinery	2911	Moving bed (TCC) regenerator	30600301	Formaldehyde	50000	2.2 lb/1000 bbl fresh feed	Controlled with CO boiler/ESP, derived from emission test data for total aldehydes	104
Petroleum refinery	2911	Fluidized catalytic cracking unit, fugitives	304	Naphthalene	91203	0.33 lb/hr	Based on weighted emission stream content	92
Petroleum refinery	2911	Entire process	3060080	Xylenes (mixed isomers)	1330207	6.61 lb/1000 barrels	With catalytic reforming, 50% storage and 50% fugitive + process emissions assumed	67
Petroleum refinery	2911	Entire process	3060080	Xylenes (mixed isomers)	1330207	3.3 lb/1000 barrels	Without catalytic reforming, 50% storage and 50% fugitive + process emissions assumed	67
Petroleum refinery - sulfur recovery plants	2911	Two-stage claus recovery process with scot tail gas unit	301032	Hydrogen sulfide	7783064	0.045 lbs/ton of sulfur feed	Single test value	194
Petroleum refinery - sulfur recovery plants	2911	Claus recovery process with beavon tail gas unit	301032	Hydrogen sulfide	7783064	0.009 lbs/ton of sulfur feed	Average of 3 test runs	194
Petroleum refinery - sulfur recovery plants	2911	Claus recovery process with wellman-lord scrubber	301032	Hydrogen sulfide	7783064	0.0007-0.004 lbs/ton of sulfur feed	Range of 4 test runs	194
Petroleum refinery - sulfur recovery plants	2911	Three-stage claus recovery process with ifp-1 tail gas unit	301032	Hydrogen sulfide	7783064	0.3 lbs/ton of sulfur feed	Average of 3 test runs, sulfur is from carbon disulfide plant	194
Petroleum refinery with cracking/reforming	2911	Tcc units (thermal catalytic cracker)		Ammonia	7664417	6 lbs/1000 bbl feed	Sources emitting > 100 tons NH3/year, emission factor rating B	179
Petroleum refinery with cracking/reforming	2911	Fcc units (fluid catalytic cracker)	30600201	Ammonia	7664417	94 lbs/1000 bbl feed	Sources emitting > 100 tons NH3/year, emission factor rating B	179

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Petroleum refinery with cracking/reforming	2911	Fugitive emissions	306	Benzene	71432	7.3 lb/ton total HC	Assumes fugitives are 0.36% benzene	92
Petroleum refinery with cracking/reforming	2911	Fugitive emissions	306	Toluene	108883	21 lb/ton total HC	Assumes fugitives are 1.05% toluene	92
Petroleum refinery with cracking/reforming	2911	Fugitive emissions	306	Xylenes (mixed isomers)	1330207	31.0 lb/ton total HC	Assumes fugitives are 1.6% xylene	92
Petroleum refinery without cracking/reforming	2911	Fugitive emissions	306	Benzene	71432	0.72 lb/ton total HC	Assumes benzene is 0.036% of total HC	92
Petroleum refinery without cracking/reforming	2911	Fugitive emissions	306	Toluene	108883	2.1 lb/ton total HC	Assumes toluene is 0.105% of THC	92
Petroleum refinery without cracking/reforming	2911	Fugitive emissions	306	Xylenes (mixed isomers)	1330207	3.1 lb/ton total HC	Assumes xylene is 0.155% of THC	92
Pharmaceutical manufacture	2834	Plantwide emissions	301040	Carbon tetrachloride	56235	220 lb/ton CCl4 used	Industry-wide mass balance	163
Pharmaceutical manufacture	2834	Plantwide emissions	301040	Chloroform	67663	320 lb/ton chloroform used	Controlled	164
Pharmaceutical manufacture	2834	Process emissions	301060	1,2-Dichlorobenzene	95501	0.280 lb/ton 1,2-dichlorobenzene used	Mass balance (industry wide)	48
Pharmaceuticals containing mercuric compounds application	80	Entire process		Mercury	7439976	400 lb/ton of Hg applied	Uncontrolled, based on engineering judgement	113
Phenol production	2865	Fugitive emissions	30120280	Phenol	108952	0.82 lb/ton produced	Engineering estimates	13
Phenol production	2865	General emissions	30120201	Phenol	108952	3.84 lb/ton produced	Engineering estimates	13
Phenol production	2865	Storage	407084	Phenol	108952	0.04 lb/ton produced	Engineering estimates	13
Phenol production using cumene process	2865	"Spent air" from the oxidizer	30120202	Benzene	71432	0.004 lb/ton phenol	At one source, measured at post oxidizer condenser vent	132
Phenol-formaldehyde resin production	2821	Formaldehyde storage	407	Formaldehyde	50000	0.04-0.4 lb/ton of 37% formaldehyde used	Uncontrolled, basis unclear	106
Phenol-formaldehyde resin production	2821	Process - general	30101805	Formaldehyde	50000	0.30-3.0 lb/ton of 37% formaldehyde used	Uncontrolled, basis unclear	106
Phenolic resin production	2821	Fugitive emissions	301018	Phenol	108952	0.24 lb/ton used	Engineering judgement	13

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Phenolic resin production	2821	General emissions	30101805	Phenol	108952	0.7 lb/ton used	Engineering judgement	13
Phenolic resin production	2821	Storage	407	Phenol	108952	0.04 lb/ton used	Engineering judgement	13
Phosgene production	2869	Fugitive emissions		Phosgene	75445	0.066 lb/ton produced	Hypothetical site, upper end of range, lower value is 0.0012 lb/ton	121
Phosgene production	2869	Fugitive emissions	301	Phosgene	75445	0.34 lb/ton produced	Based on data from one site	13
Phosgene production	2869	Process upsets		Phosgene	75445	0.0005 lb/ton phosgene produced		121
Phosgene production	2869	Process vents		Phosgene	75445	0.003 lb/ton produced	Hypothetical site, incinerator and scrubber control, includes storage tanks	121
Phosgene production by chlorination of CO	2869	Absorption		Toluene	108883	2.5 lb/ton produced	Control uncertain, based on tests and mass balance	95
Phosgene/diisocyanate production	2869	Fugitive emissions	301	Phosgene	75445	0.058 lb/hr operation	Based on measurements at a chemical plant	14
Phosphate fertilizer manufacturing	2874	Reactor-granulator/dryer/cooler vents, diammonium phosphate plant	301016	Fluoride	16984488	0.0243-0.055 lbs/ton of P2O5 produced	Ctrl by a venturi scrubber & spray-crossflow packed scrubbers, ave 13 tests 0.0348 lbs/ton P2O5	196
Phosphate fertilizer manufacturing	2874	Barometric condenser hotwell/product acid cooling tank, superphosphori	30101603	Fluoride	16984488	0.00041-0.0015 lbs/ton of P2O5 produced	Controlled by a venturi scrubber, average of 6 tests was 0.0007 lbs/ton P2O5	196
Phosphate fertilizer manufacturing	2874	Diammonium phosphate process	301030	Fluoride	16984488	0.14 lb/ton P2O5 input	Controlled with a packed scrubber	174
Phosphate fertilizer manufacturing	2874	Granular triple superphosphate storage	301029	Fluoride	16984488	0.0003-0.0005 lb/ton P2O5 input		174
Phosphate fertilizer manufacturing - wet process	2874	Gypsum pond fugitive emissions	30101602	Fluoride	16984488	0.8-3.2 lbs/acre-day	Assumes F concentration of 12000 PPM in pond, wind speed varies from 1-6 M/Sec, 90 F temp	190
Phosphate fertilizer manufacturing - wet process	2874	Gypsum pond fugitive emissions	30101602	Fluoride	16984488	0.2-7.3 lbs/acre-day	Assumes F concentration of 18-46 PPM above pond	190
Phosphate fertilizer manufacturing - wet process	2874	Two single-tank reactors, phosphoric acid plant	30101601	Fluoride	16984488	0.0040-0.0112 lbs/ton of P2O5 produced	Controlled by two impingement scrubbers in series, average of 3 tests was 0.0081 lbs/ton P2O5	196
Phosphate fertilizer manufacturing - wet process	2874	Conventional multi-compartment tank reactor, phosphoric acid plant	30101601	Fluoride	16984488	0.007-0.0186 lbs/ton of P2O5 produced	Controlled by spray-concurrent packed scrubber, average of 5 test runs was 0.0137 lbs/ton P2O5	196

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Phosphate fertilizer manufacturing - wet process	2874	Conventional multi-compartment tank reactor, phosphoric acid plant	30101601	Fluoride	16984488	0.0016-0.0184 lbs/ton of P2O5 produced	Ctrl by spray-crossflow packed scrubber, rng rep 18 test runs / 3 fac., avg rate 0.0088 lb/ton P2O5	198
Phosphate fertilizer manufacturing - wet process	2874	Diammonium phosphate process	301030	Radionuclides		9.8 nCi/metric ton fertilizer produced	Rough est. U-238,U-234,Th-230 from DAP controlled with venturi scrubber	37
Phosphate fertilizer manufacturing - wet process	2874	Diammonium phosphate process	301030	Radionuclides		0.82 nCi Ra-226/metr. ton fertil. prod.	Rough est. controlled w/ Venturi scrubber, emits 0.328 lb PM/ton fertilizer prod.	37
Phosphate fertilizer manufacturing - wet process	2874	Diammonium phosphate process	301030	Radionuclides		4.9 nCi Pb-210/metr. ton fertil. prod.	Rough est. controlled w/ Venturi scrubber, emits 0.328 lb PM/ton fertilizer prod.	37
Phosphate fertilizer manufacturing - wet process	2874	Diammonium phosphate process	301030	Radionuclides		4.9 nCi Po-210/metr. ton fertil. prod.	Rough est. controlled w/ Venturi scrubber, emits 0.328 lb PM/ton fertilizer prod.	37
Phosphate fertilizer manufacturing - wet process	2874	Granular triple superphosphate process	301029	Radionuclides		6.0 nCi/metric ton fertilizer produced	Rough est. U-238,U-234,Th-230 from GTSP controlled w/ Venturi scrubber	37
Phosphate fertilizer manufacturing - wet process	2874	Granular triple superphosphate process	301029	Radionuclides		2.0 nCi Ra-226/metric ton fertil. prod.	Rough est. controlled with Venturi scrubber, emitting 0.2 lb PM/ton fertil. prod.	37
Phosphate fertilizer manufacturing - wet process	2874	Granular triple superphosphate process	301029	Radionuclides		3.0 nCi Pb-210/metric ton fertil. prod.	Rough est. controlled with Venturi scrubber, emitting 0.2 lb PM/ton fertil. prod.	37
Phosphate fertilizer manufacturing - wet process	2874	Granular triple superphosphate process	301029	Radionuclides		3.0 nCi Po-210/metric ton fertil. prod.	Rough est. controlled with Venturi scrubber, emitting 0.2 lb PM/ton fertil. prod.	37
Phosphate rock processing	1475	Fluid bed, oil-fired calciner	30501905	Fluoride	16984488	0.0006-0.0030 lbs/ton of rock throughput	Controlled by a venturi scrubber, average of 6 test runs was 0.0016 lbs/ton throughput	192
Phosphate rock processing	1475	Dryer	30501901	Radionuclides		5.2 nCi/metr. ton phosph. rock processed	Rough est. for dryer w/ low energy scrubber release. 0.26 lb PM/ton rock processed	37
Phosphate rock processing	1475	Grinder	30501902	Radionuclides		1.0 nCi/metr. ton phosph. rock processed	Rough est. for dryer w/ low energy scrubber release. 0.26 lb PM/ton rock processed	37
Phosphoric acid production	2874	Wet process	301016	Fluoride	16984488	0.01-0.02 lb/ton P2O5 input	Controlled with a packed scrubber	174
Phosphoric acid production	2874	Condenser	301017	Hydrogen fluoride	7664393	0.010 lbs/ton phosphate rock processed	Controlled factor	181

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Phosphoric acid production - wet process	2874	Condenser	30101603	Fluorine	7782414	61.2 lb/ton acid	Uncontrolled, based on mass balance	97
Phosphoric acid production - wet process	2874	Gypsum settling ponds	30101602	Fluorine	7782414	1.12 lb/ton acid	0.7 acres of pond needed to produce 1 ton acid	97
Phosphoric acid production - wet process	2874	Reactor	30101601	Fluorine	7782414	56.4 lb/ton	Uncontrolled, based on mass balance	97
Phosphoric acid production - wet process	2874	Gypsum settling ponds	30101602	Hydrogen fluoride	7664393	0.42 lbs/ton phosphate rock processed		101
Phosphoric acid production - wet process	2874	Condenser	30101603	Hydrogen fluoride	7664393	0.043 lbs/ton phosphate rock processed		101
Phosphoric acid production - wet process	2874	Reactor	30101601	Hydrogen fluoride	7664393	0.37 lbs/ton phosphate rock processed		101
Phosphorus (elemental) production	1475	Calciner stack	30501905	Radionuclides		6.3 nCi/metr. ton phos. rock processed	Rough est, calciner control. w/ low energy scrub., emit. 0.50 lb PM/ton rock proc.	37
Phosphorus (elemental) production	1475	Calciner stack	30501905	Radionuclides		25 uCi Rn-222/Mg phos. rock processed	Rough est, calciner control. w/ low energy scrub., emit. 0.50 lb PM/ton rock processed	37
Phosphorus (elemental) production	1475	Calciner stack	30501905	Radionuclides		1.3 uCi Pb-210/Mg phos rock processed	Rough est, calciner control. w/ low energy scrub., emit. 0.50 lb PM/ton rock processed	37
Phosphorus (elemental) production	1475	Calciner stack	30501905	Radionuclides		2.5 uCi Po-210/Mg phos rock processed	Rough est, calciner control. w/ low energy scrub., emit. 0.50 lb PM/ton rock processed	37
Phosphorus (elemental) production	1475	Non-calciner stack	305019	Radionuclides		6.3 nCi/ metric ton phos. rock processed	Rough est., stacks emit 0.50 lb PM/ton phos. rock processed	37
Photographic film processing	7384	Splicing glue		Methylene chloride	75092	2000 lb/ton MC in splicing glue applied	Uncontrolled, based on engineering judgement	49
Phthalic anhydride production	2865	Phthalic anhydride condensers	301019	Formaldehyde	50000	4.2 lb/ton PA produced	Uncontrolled, no info. was available on the basis of these estimates or types of controls involved	106
Phthalic anhydride production	2865	Phthalic anhydride condensers	301019	Formaldehyde	50000	0.148 lb/ton PA produced	Controlled by direct incin., no info. was available on basis of these est. or types of control invol	106
Phthalic anhydride production	2865	Fugitive emissions	301019	1,2-Xylene	95476	0.08 lb/ton xylene used	Estimated	13
Phthalic anhydride production	2865	Process - general	30101901	1,2-Xylene	95476	0.28 lb/ton xylene used	Estimated	13
Phthalic anhydride production	2865	Storage	407	1,2-Xylene	95476	0.04 lb/ton xylene used	Estimated	13

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Phthalic anhydride production - naphthalene process	2865	Main process incinerator	301019	Benzoic acid	65850	3.12 lb/ton PA produced	Uncontrolled, test data and engineering judgement	120
Phthalic anhydride production - naphthalene process	2865	Main process incinerator	301019	Benzoic acid	65850	0.1 lb/ton PA produced	Controlled, test data and engineering judgement	120
Phthalic anhydride production - naphthalene process	2865	Fugitive emissions	301019	Diphenyl ether	101848	0.032 lb/ton PA produced	Uncontrolled, test data and engineering judgement	120
Phthalic anhydride production - naphthalene process	2865	Main process incinerator	301019	Formaldehyde	50000	4.2 lb/ton PA produced	Uncontrolled, all aldehyde assumed to be formaldehyde	120
Phthalic anhydride production - naphthalene process	2865	Main process incinerator	301019	Formaldehyde	50000	0.140 lb/ton PA produced	Controlled, test data and engineering judgement	120
Phthalic anhydride production - naphthalene process	2865	Main process incinerator	301019	Maleic anhydride	108316	14 lb/ton PA produced	Uncontrolled, test data and engineering judgement	120
Phthalic anhydride production - naphthalene process	2865	Main process incinerator	301019	Maleic anhydride	108316	0.58 lb/ton PA produced	Controlled, test data and engineering judgement	120
Phthalic anhydride production - naphthalene process	2865	Secondary incinerator	301019	Maleic anhydride	108316	9.8 lb/ton PA produced	Uncontrolled, test data and engineering judgement	120
Phthalic anhydride production - naphthalene process	2865	Secondary incinerator	301019	Maleic anhydride	108316	0.1 lb/ton PA produced	Controlled (not specified), test data and engineering judgement	120
Phthalic anhydride production - naphthalene process	2865	Storage tank emissions	407036	Naphthalene	91203	1.3 lb/ton PA produced	Uncontrolled, test data and engineering judgement	120
Phthalic anhydride production - naphthalene process	2865	Storage tank emissions	407	Naphthalene	91203	0.012 lb/ton PA produced	Controlled, test data and engineering judgement	120
Phthalic anhydride production - naphthalene process	2865	Main process incinerator	301019	1,4-Naphthoquinone	130154	1.38 lb/ton PA produced	Uncontrolled, test data and engineering judgement	120
Phthalic anhydride production - naphthalene process	2865	Main process incinerator	301019	1,4-Naphthoquinone	130154	0.04 lb/ton PA produced	Controlled, test data and engineering judgement	120

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Phthalic anhydride production - naphthalene process	2865	Secondary incinerator	301019	1,4-Naphthoquinone	130154	13.2 lb/ton PA produced	Uncontrolled, test data and engineering judgement	120
Phthalic anhydride production - naphthalene process	2865	Secondary incinerator	301019	1,4-Naphthoquinone	130154	0.14 lb/ton PA produced	Controlled (not specified), test data and engineering judgement	120
Phthalic anhydride production - naphthalene process	2865	Flaker/bagger	301019	Phthalic anhydride	85449	0.20 lb/ton PA produced	Uncontrolled, test data and engineering judgement	120
Phthalic anhydride production - naphthalene process	2865	Flaker/bagger	301019	Phthalic anhydride	85449	0.002 lb/ton PA produced	Controlled, test data and engineering judgement	120
Phthalic anhydride production - naphthalene process	2865	Main process incinerator	301019	Phthalic anhydride	85449	40.9 lb/ton PA produced	Uncontrolled, test data and engineering judgement	120
Phthalic anhydride production - naphthalene process	2865	Main process incinerator	301019	Phthalic anhydride	85449	1.42 lb/ton PA produced	Controlled, test data and engineering judgement	120
Phthalic anhydride production - naphthalene process	2865	Secondary incinerator	301019	Phthalic anhydride	85449	19.6 lb/ton PA produced	Uncontrolled, test data and engineering judgement	120
Phthalic anhydride production - naphthalene process	2865	Secondary incinerator	301019	Phthalic anhydride	85449	0.2 lb/ton PA produced	Controlled (not specified), test data and engineering judgement	120
Phthalic anhydride production - naphthalene process	2865	Storage tank emissions	407004	Phthalic anhydride	85449	0.7 lb/ton PA produced	Uncontrolled, test data and engineering judgement	120
Phthalic anhydride production - naphthalene process	2865	Storage tank emissions	407	Phthalic anhydride	85449	0.008 lb/ton PA produced	Controlled, test data and engineering judgement	120
Phthalic anhydride production - naphthalene process	2865	Transport loading	301019	Phthalic anhydride	85449	0.90 lb/ton PA produced	Uncontrolled, test data and engineering judgement	120
Phthalic anhydride production - naphthalene process	2865	Transport loading	301019	Phthalic anhydride	85449	0.010 lb/ton PA produced	Controlled, test data and engineering judgement	120
Phthalic anhydride production - naphthalene process	2865	Catalyst storage	301019	Vanadium oxide	1314621	0.82 lb catalyst/ton PA produced	Uncontrolled, emissions are the catalyst, not pure vanadium oxide	120

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Phthalic anhydride production - naphthalene process	2865	Catalyst storage	301019	Vanadium oxide	1314621	0.02 lb catalyst/ton PA produced	Controlled, emissions are the catalyst, not pure vanadium oxide	120
Phthalic anhydride production - xylene process	2865	Main process incinerator	301019	Benzoic acid	65850	0.218 lb/ton PA produced	Controlled, based on test data	120
Phthalic anhydride production - xylene process	2865	Main process incinerator	301019	Benzoic acid	65850	6.24 lb/ton PA produced	Uncontrolled, based on test data and engineering judgement	120
Phthalic anhydride production - xylene process	2865	Secondary incinerator	301019	Benzoic acid	65850	0.025 lb/ton PA produced	Controlled, test data and engineering judgement	120
Phthalic anhydride production - xylene process	2865	Secondary incinerator	301019	Benzoic acid	65850	2.5 lb/ton PA produced	Uncontrolled, based on test data and engineering judgement	120
Phthalic anhydride production - xylene process	2865	Fugitive emissions	301019	Diphenyl ether	101848	0.032 lb/ton PA produced	Uncontrolled, heat transfer fluid	120
Phthalic anhydride production - xylene process	2865	Main process incinerator	301019	Formaldehyde	50000	0.148 lb/ton PA produced	Controlled, all aldehyde assumed to be formaldehyde	120
Phthalic anhydride production - xylene process	2865	Main process incinerator	301019	Formaldehyde	50000	4.2 lb/ton PA produced	Uncontrolled, all aldehydes reported as formaldehyde	120
Phthalic anhydride production - xylene process	2865	Main process incinerator	301019	Maleic anhydride	108316	3.44 lb/ton PA produced	Controlled, based on test data	120
Phthalic anhydride production - xylene process	2865	Main process incinerator	301019	Maleic anhydride	108316	104 lb/ton PA produced	Uncontrolled, based on test data and engineering judgement	120
Phthalic anhydride production - xylene process	2865	Secondary incinerator	301019	Maleic anhydride	108316	0.074 lb/ton PA produced	Controlled, test data and engineering judgement	120
Phthalic anhydride production - xylene process	2865	Secondary incinerator	301019	Maleic anhydride	108316	7.5 lb/ton PA produced	Uncontrolled, based on test data and engineering judgement	120
Phthalic anhydride production - xylene process	2865	Flaker/bagger	301019	Phthalic anhydride	85449	0.20 lb/ton PA produced	Uncontrolled, based on test data and engineering judgement	120

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Phthalic anhydride production - xylene process	2865	Flaker/bagger	301019	Phthalic anhydride	85449	0.002 lb/ton PA produced	Controlled, test data and engineering judgement	120
Phthalic anhydride production - xylene process	2865	Main process incinerator	301019	Phthalic anhydride	85449	1.09 lb/ton PA produced	Controlled, based on test data	120
Phthalic anhydride production - xylene process	2865	Main process incinerator	301019	Phthalic anhydride	85449	31.2 lb/ton PA produced	Uncontrolled, based on test data and engineering judgement	120
Phthalic anhydride production - xylene process	2865	Secondary incinerator	301019	Phthalic anhydride	85449	0.212 lb/ton PA produced	Controlled, test data and engineering judgement	120
Phthalic anhydride production - xylene process	2865	Secondary incinerator	301019	Phthalic anhydride	85449	21.2 lb/ton PA produced	Uncontrolled, based on test data and engineering judgement	120
Phthalic anhydride production - xylene process	2865	Storage tank emissions	407	Phthalic anhydride	85449	0.006 lb/ton PA produced	Controlled, test data and engineering judgement	120
Phthalic anhydride production - xylene process	2865	Storage tank emissions	407004	Phthalic anhydride	85449	0.58 lb/ton PA produced	Uncontrolled, based on test data and engineering judgement	120
Phthalic anhydride production - xylene process	2865	Transport loading	301019	Phthalic anhydride	85449	0.90 lb/ton PA produced	Uncontrolled, based on test data and engineering judgement	120
Phthalic anhydride production - xylene process	2865	Transport loading	301019	Phthalic anhydride	85449	0.01 lb/ton PA produced	Controlled, test data and engineering judgement	120
Phthalic anhydride production - xylene process	2865	Storage tank emissions	407	Xylenes (mixed isomers)	1330207	0.004 lb/ton PA produced	Controlled, test data and engineering judgement	120
Phthalic anhydride production - xylene process	2865	Storage tank emissions	407036	Xylenes (mixed isomers)	1330207	0.40 lb/ton PA produced	Uncontrolled, based on test data and engineering judgement	120
Plastic stabilizers manufacture	2869	Total plant emissions		Cadmium	7440439	6 lb/ton Cd charged	Engineering estimate, controlled with baghouse	38
Plastics processing	2821	General solvent use	301018	Methylene chloride	75092	2000 lb/ton used	Assume all is eventually released to atmosphere	13
Plastics processing	2821	Closed molding		Styrene	100425	0.01 - 0.02 lb/lb styrene resin used	Vapor-suppressed resin	97

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Plastics processing	2821	Closed molding		Styrene	100425	0.01 - 0.03 lb/lb styrene resin used	Nonvapor-suppressed resin	97
Plastics processing	2821	Marble casting		Styrene	100425	0.01 - 0.02 lb/lb styrene resin used	Vapor-suppressed resin	97
Plastics processing	2821	Marble casting		Styrene	100425	0.01 - 0.03 lb/lb styrene resin used	Nonvapor-suppressed resin	97
Plastics processing	2821	Filament winding		Styrene	100425	0.02 - 0.07 lb/lb styrene resin produced	Vapor-suppressed resin	97
Plastics processing	2821	Filament winding		Styrene	100425	0.05 - 0.10 lb/lb styrene resin produced	Nonvapor-suppressed resin	97
Plastics processing	2821	Pultrusion		Styrene	100425	0.01 - 0.05 lb/lb styrene resin used	Vapor-suppressed resin	97
Plastics processing	2821	Pultrusion		Styrene	100425	0.04 - 0.07 lb/lb styrene resin used	Nonvapor-suppressed resin	97
Plastics processing	2821	Continuous lamination		Styrene	100425	0.01 - 0.05 lb/lb styrene resin used	Vapor-suppressed resin	97
Plastics processing	2821	Continuous lamination		Styrene	100425	0.04 - 0.07 lb/lb styrene resin used	Nonvapor-suppressed resin	97
Plastics processing	2821	Spray layup		Styrene	100425	0.03 - 0.09 lb/lb styrene resin used	Vapor-suppressed resin	97
Plastics processing	2821	Spray layup		Styrene	100425	0.09 - 0.13 lb/lb styrene resin used	Nonvapor-suppressed resin	97
Plastics processing	2821	Hand layup		Styrene	100425	0.02 - 0.07 lb/lb styrene resin used	Vapor-suppressed resin	97
Plastics processing	2821	Hand layup		Styrene	100425	0.05 - 0.10 lb/lb styrene resin used	Nonvapor-suppressed resin	97
Polyacetal resin production	2821	Formaldehyde storage	301018	Formaldehyde	50000	0.04-0.06 lb/ton of 37% formaldehyde use	No information was available on the basis of these estimates or the types of control involved	104
Polyacetal resin production	2821	Process - general	301018	Formaldehyde	50000	0.18-0.74 lb/ton of 37% formaldehyde use	No information was available on the basis of these estimates or the types of control involved	104
Polybutadiene production	2822	Equipment leak	301	1,3-Butadiene	106990	2.4 lb/ton PBd produced	Uncontrolled, based on average of six plant's capacities and emissions	80
Polybutadiene production	2822	Process vents	301	1,3-Butadiene	106990	0.052 lb/ton PBd produced	Controlled (flare), calculated from average of four plants emissions and capacities	80

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Polybutadiene production	2822	Process vents	301	1,3-Butadiene	106990	1.0 lb/ton PBd produced	Uncontrolled, based on one plant's emissions and capacity	80
Polybutadiene production	2822	Wastewater emissions	301	1,3-Butadiene	106990	0.6 lb/ton PBd produced	Uncontrolled, based on one plant's data	80
Polybutadiene production	2822	Wastewater emissions	301	1,3-Butadiene	106990	0.240 lb/ton PBd produced	Uncontrolled, average emission factor based on 3 facilities	166
Polybutadiene production	2822	Process vents	301	1,3-Butadiene	106990	0.960 lb/ton PBd produced	Uncontrolled, average emission factor based on 6 facilities	166
Polybutadiene production	2822	Equipment leak	301	1,3-Butadiene	106990	10.4 tons/yr	Uncontrolled, average emission factor based on 6 facilities	166
Polybutadiene production	2822	Process vents	301	1,3-Butadiene	106990	6.14 lb/ton	Controlled (unspecified), average emission factor based on 6 facilities	166
Polycarbonate production	2821	Fugitive emissions	301018	Phosgene	75445	0.0116 lb/ton phosgene produced	Hypothetical site, upper end of range, lower value is 0.0003 lb/ton phosgene produced	121
Polycarbonate production	2821	Process waste	301018	Phosgene	75445	0.0006 lb/ton phosgene		121
Polycarbonate production	2821	Process vents	301018	Phosgene	75445	0.0132 lb/ton phosgene produced	Hypothe. site, value for polycarb. alone, add to value for phos. to get total for phos.-polyc. plant	121
Polyether polyol production	2869	Fugitive emissions/equipment leaks	301250	Propylene oxide	75569	4409 lb/yr	Based on VOC of 61729 lb/yr (8 pump seals in service) and 7.6 wt% PO in stream	24
Polyether polyol production	2869	Process vents	301250	Propylene oxide	75569	0.26 lb/ton PO consumed		24
Polystyrene production - batch process	2821	Devolatilizer condenser	30101817	Styrene	100425	1 lb/ton polystyrene	Control status unclear, range 0.50-1.50	96
Polystyrene production - batch process	2821	Extruder quench	30101821	Styrene	100425	0.46 lb/ton polystyrene	Control status unclear, range 0.30-0.6	96
Polystyrene production - batch process	2821	Monomer storage/feed dissolver	30101817	Styrene	100425	0.18 lb/ton polystyrene	Control status unclear	96
Polystyrene production - batch process	2821	Reactor	30101818	Styrene	100425	1.47 lb/ton polystyrene	Control status unclear, range 0.24-2.70	96
Polystyrene production - continuous process	2821	Devolatilizer condenser	30101817	Styrene	100425	3.0 lb/ton polystyrene	Control status unclear, range 0.10-9.92	96
Polystyrene production - continuous process	2821	Extruder quench	30101821	Styrene	100425	0.30 lb/ton polystyrene	Control status unclear, range 0.10-0.26	96
Polystyrene production - continuous process	2821	Feed dissolver	30101817	Styrene	100425	0.016 lb/ton polystyrene	Control status unclear	96

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Polystyrene production - continuous process	2821	Styrene recovery unit	30101817	Styrene	100425	0.18 lb/ton polystyrene	Control status unclear, range 0.10-0.26	96
Polysulfide rubber production	2822	Entire process	30102601	1,2-Dichloroethane	107062	67.6 lb/ton polysulfide rubber produced	Controlled, based on engineering judgement	81
Polyurethane foam (flexible slabstock) production	3086	Equipment leak emissions	30101189	Methylene chloride	75092	34 lb/ton of MC consumed	Uncontrolled, based on SOCMI VOC emission factors and questionnaire responses	73
Polyurethane foam (flexible slabstock) production	3086	Equipment leak emissions	30101189	Methylene chloride	75092	10 lb/ton of MC consumed	Controlled by leak detection and repair, based on engineering judgement	73
Polyurethane foam (flexible slabstock) production	3086	Process vents (foam tunnel, curing area)	30101189	Methylene chloride	75092	1960 lb/ton of MC consumed	Uncontrolled, based on facility questionnaire responses and engineering judgement	73
Polyurethane foam (flexible slabstock) production	3086	Process vents (foam tunnel, curing area)	30101189	Methylene chloride	75092	840 lb/ton of MC consumed	Curing area vents uncontrol., foam tunnel vents control. by encl. & carbon adsorb, engineering judg.	73
Polyurethane foam (flexible slabstock) production	3086	Storage tank emissions	30101894	Methylene chloride	75092	6 lb/ton of MC consumed	Uncontrolled, calculated from questionnaire responses using AP-42 equations	73
Polyurethane foam (flexible slabstock) production	3086	Storage tank emissions	30101894	Methylene chloride	75092	1 lb/ton of MC consumed	Controlled by refrigerated condenser, based on engineering judgement	73
Polyurethane foam production	3086	Entire process	30101189	Methylene chloride	75092	2000 lb/ton MC consumed	Uncontrolled, based on engineering judgement	69
Polyvinyl chloride production	2821	Suspension process, entire plant	30101801	1,3-Butadiene	106990	4.2 x 10E-4 lb/ton PVC	Based on a model plant, 1978 data, 1.5 x 10E8 lb capacity, control status not certain	138
Polyvinyl chloride production	2821	Suspension process, entire plant	30101801	Chloroprene	126998	<8 x 10E-5 lb/ton PVC	Based on a model plant, 1978 data, 1.5 x 10E8 lb capacity, control status not certain	138
Polyvinyl chloride production	2821	Suspension process, entire plant	30101801	1,2-Dichloroethane	107062	8 x 10E-5 lb/ton PVC	Based on a model plant, 1978 data, 1.5 x 10E8 lb capacity, control status not certain	138
Polyvinyl chloride production	2821	Suspension process, entire plant	30101801	Hydrogen chloride	7647010	4.2 x 10E-4 lb/ton PVC	Based on a model plant, 1978 data, 1.5 x 10E8 lb capacity, control status not certain	138
Polyvinyl chloride production	2821	Suspension process, entire plant	30101801	Propylene	115071	1.4 x 10E-4 lb/ton PVC	Based on a model plant, 1978 data, 1.5 x 10E8 lb capacity, control status not certain	138
Polyvinyl chloride production	2821	PVC suspension process using TCE as a reaction chain transfer agent	30101801	Trichloroethylene	79016	40 lb/ton of TCE consumed	Control status unspecified, based on aggregate emis. & consumption totals for PVC producers in 1978	105

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Polyvinyl chloride production	2821	Bulk polymerization process	30101801	Vinyl chloride	75014	48.4 lb/ton PVC	Based on a model plant, 1978 data, 1.8 x 10E8 lb capacity, control status not certain	138
Polyvinyl chloride production	2821	Bulk polymerization process, area emissions - silo, bagger, loading	30101801	Vinyl chloride	75014	4.6 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Polyvinyl chloride production	2821	Bulk polymerization process, fugitives	30101801	Vinyl chloride	75014	9.6 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Polyvinyl chloride production	2821	Bulk polymerization process, monomer recovery vent	30101801	Vinyl chloride	75014	30 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Polyvinyl chloride production	2821	Bulk polymerization process, process water	30101801	Vinyl chloride	75014	0.22 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Polyvinyl chloride production	2821	Bulk polymerization process, reactor opening loss	30101801	Vinyl chloride	75014	1.6 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Polyvinyl chloride production	2821	Bulk polymerization process, reactor safety valve vents	30101801	Vinyl chloride	75014	2 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Polyvinyl chloride production	2821	Centrifuge vents	301018	Vinyl chloride	75014	2.6 lb/ton PVC	Engineering judgement	138
Polyvinyl chloride production	2821	Combined sources after resin stripping	301018	Vinyl chloride	75014	25 lb/ton PVC product	Rough estimate for uncontrolled emissions	27
Polyvinyl chloride production	2821	Combined sources after resin stripping	301018	Vinyl chloride	75014	0.4 lb/ton PVC product	Rough estimate for actual emissions, control level at 23 existing plants unknown	27
Polyvinyl chloride production	2821	Dispersion process, area emissions - dryer, silo, bagger, loading	301018	Vinyl chloride	75014	48.2 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Polyvinyl chloride production	2821	Dispersion process, fugitives	301018	Vinyl chloride	75014	22.6 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Polyvinyl chloride production	2821	Dispersion process, monomer recovery vent	301018	Vinyl chloride	75014	10 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Polyvinyl chloride production	2821	Dispersion process, process water	301018	Vinyl chloride	75014	0.5 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Polyvinyl chloride production	2821	Dispersion process, reactor opening loss	301018	Vinyl chloride	75014	3.0 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Polyvinyl chloride production	2821	Dispersion process, reactor safety valve vents	301018	Vinyl chloride	75014	4.4 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Polyvinyl chloride production	2821	Dispersion process, slurry blend tank	301010	Vinyl chloride	75014	6.8 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Polyvinyl chloride production	2821	Dispersion process, stripper loss	301010	Vinyl chloride	75014	34.4 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Polyvinyl chloride production	2821	Dryer discharge	301010	Vinyl chloride	75014	2.8 lb/ton PVC	Engineering judgement	138
Polyvinyl chloride production	2821	Emulsion polymerization process	30101801	Vinyl chloride	75014	120.2 lb/ton PVC	Based on a model plant, 1978 data, 1.5 x 10E8 lb capacity, control status not certain	138
Polyvinyl chloride production	2821	Fugitive emissions	301010	Vinyl chloride	75014	30.6 lb/ton PVC product	Rough estimate for uncontrolled emissions	27
Polyvinyl chloride production	2821	Fugitive emissions	301010	Vinyl chloride	75014	0.76 lb/ton PVC product	Rough estimate for actual emissions, control level at 23 existing plants unknown	27
Polyvinyl chloride production	2821	Monomer recovery condenser vent	301010	Vinyl chloride	75014	10 lb/ton PVC	Engineering judgement	138
Polyvinyl chloride production	2821	Primary control	301010	Vinyl chloride	75014	9.6 lb/ton PVC product	Rough estimate of uncontrolled emissions	27
Polyvinyl chloride production	2821	Primary control	301010	Vinyl chloride	75014	0.02 lb/ton PVC product	Rough estimate of actual emissions, control level at 23 existing plants unknown	27
Polyvinyl chloride production	2821	Reactor entry purge	301010	Vinyl chloride	75014	8.6 lb/ton PVC	Engineering judgement	138
Polyvinyl chloride production	2821	Reactor opening loss	301010	Vinyl chloride	75014	9.2 lb/ton PVC product	Rough estimate for uncontrolled emissions	27
Polyvinyl chloride production	2821	Reactor opening loss	301010	Vinyl chloride	75014	0.04 lb/ton PVC product	Rough estimate for actual emissions, control level at 23 existing plants unknown	27
Polyvinyl chloride production	2821	Reactor safety relief valve	301010	Vinyl chloride	75014	4.2 lb/ton PVC	Engineering judgement, control status not certain	138
Polyvinyl chloride production	2821	Relief valves	301010	Vinyl chloride	75014	4.0 lb/ton PVC product	Rough estimate for uncontrolled emissions	27
Polyvinyl chloride production	2821	Relief valves	301010	Vinyl chloride	75014	0.1404 lb/ton PVC product	For actual emissions, control level unknown	27
Polyvinyl chloride production	2821	Slurry blend tank vents	301010	Vinyl chloride	75014	8.8 lb/ton PVC	Engineering judgement	138
Polyvinyl chloride production	2821	Solution polymerization process	30101801	Vinyl chloride	75014	39.6 lb/ton PVC	Based on a model plant, 1978 data, 1.5 x 10E8 lb capacity, control status not certain	138

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Polyvinyl chloride production	2821	Solvent polymerization process, area sources - silo/dryer/bagger/load.	30101801	Vinyl chloride	75014	16.6 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Polyvinyl chloride production	2821	Solvent polymerization process, fugitives	30101801	Vinyl chloride	75014	0.6 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Polyvinyl chloride production	2821	Solvent polymerization process, monomer recovery vent	30101801	Vinyl chloride	75014	6.2 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Polyvinyl chloride production	2821	Solvent polymerization process, process water	30101801	Vinyl chloride	75014	0.04 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Polyvinyl chloride production	2821	Solvent polymerization process, reactor opening loss	30101801	Vinyl chloride	75014	10 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Polyvinyl chloride production	2821	Solvent polymerization process, reactor safety valve vents	30101801	Vinyl chloride	75014	1.2 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Polyvinyl chloride production	2821	Solvent polymerization process, stripper loss	30101801	Vinyl chloride	75014	1.0 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Polyvinyl chloride production	2821	Storage silos	301018	Vinyl chloride	75014	1.4 lb/ton PVC	Engineering judgement	138
Polyvinyl chloride production	2821	Stripper jets	301018	Vinyl chloride	75014	3.6 lb/ton PVC	Engineering judgement	138
Polyvinyl chloride production	2821	Suspension process, area emissions - dryer, silo, bagger, loading	30101801	Vinyl chloride	75014	16 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Polyvinyl chloride production	2821	Suspension process, centrifuge vent	30101801	Vinyl chloride	75014	2.6 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Polyvinyl chloride production	2821	Suspension process, entire plant	30101801	Vinyl chloride	75014	71 lb/ton PVC	Based on a model plant, 1978 data, 1.0 x 10E8 lb capacity, control status not certain	138
Polyvinyl chloride production	2821	Suspension process, fugitives	30101801	Vinyl chloride	75014	30 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Polyvinyl chloride production	2821	Suspension process, monomer recovery	30101801	Vinyl chloride	75014	9.4 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Polyvinyl chloride production	2821	Suspension process, process water	30101801	Vinyl chloride	75014	0.05 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Polyvinyl chloride production	2821	Suspension process, reactor opening loss	30101801	Vinyl chloride	75014	2.8 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Polyvinyl chloride production	2821	Suspension process, reactor safety valve vents	30101801	Vinyl chloride	75014	4.0 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Polyvinyl chloride production	2821	Suspension process, slurry blend tank	30101801	Vinyl chloride	75014	8.4 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Polyvinyl chloride production	2821	Suspension process, stripper loss	30101801	Vinyl chloride	75014	6.4 lb VC monomer/ton PVC prod.	Industry average, control level at existing plants unknown, variable	26
Polyvinyl chloride production	2821	Suspension process, entire plant	30101801	Vinylidene chloride	75354	1.8 = 10E-4 lb/ton PVC	Based on a model plant, 1978 data, 1.8 = 10KG lb capacity, control status not certain	138
Primary aluminum production	3334	Anode baking furnace	30300108	Fluoride	16984488	0.9 lb/ton molten Al product	Uncontrolled, gaseous fluoride, based on test data	97
Primary aluminum production	3334	Anode baking furnace	30300108	Fluoride	16984488	0.1 lb/ton molten Al product	Uncontrolled, particulate fluoride, based on test data	97
Primary aluminum production	3334	Anode baking furnace	30300108	Fluoride	16984488	0.04 lb/ton molten Al product	Gaseous fluoride, based on test data, spray tower	97
Primary aluminum production	3334	Anode baking furnace	30300108	Fluoride	16984488	0.03 lb/ton molten Al product	Particulate fluoride, based on test data, spray tower	97
Primary aluminum production	3334	Anode baking furnace	30300108	Fluoride	16984488	0.04 lb/ton molten Al product	Gaseous fluoride, based on test data, ESP	97
Primary aluminum production	3334	Anode baking furnace	30300108	Fluoride	16984488	0.03 lb/ton molten Al product	Particulate fluoride, based on test data, ESP	97
Primary aluminum production	3334	Anode baking furnace	30300108	Fluoride	16984488	0.009 lb/ton molten Al product	Gaseous fluoride, based on test data, dry alumina scrubber	97
Primary aluminum production	3334	Anode baking furnace	30300108	Fluoride	16984488	0.002 lb/ton molten Al product	Particulate fluoride, based on test data, dry alumina scrubber	97
Primary aluminum production	3334	Horizontal Soderberg stud cell	30300102	Fluoride	16984488	22 lb/ton molten Al product	Uncontrolled, gaseous fluoride, based on test data	97
Primary aluminum production	3334	Horizontal Soderberg stud cell	30300102	Fluoride	16984488	12 lb/ton molten Al product	Uncontrolled, particulate fluoride, based on test data	97
Primary aluminum production	3334	Horizontal Soderberg stud cell	30300109	Fluoride	16984488	2.2 lb/ton molten Al product	Gaseous fluoride, fugitive, based on test data	97
Primary aluminum production	3334	Horizontal Soderberg stud cell	30300109	Fluoride	16984488	1.2 lb/ton molten Al product	Particulate fluoride, fugitive, based on test data	97
Primary aluminum production	3334	Horizontal Soderberg stud cell	30300102	Fluoride	16984488	19.8 lb/ton molten Al product	Gaseous fluoride, emissions to collector, based on test data	97

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Primary aluminum production	3334	Horizontal Soderberg stud cell	30300102	Fluoride	16984488	10.0 lb/ton molten Al product	Particulate fluoride, emissions to collector, based on test data	97
Primary aluminum production	3334	Horizontal Soderberg stud cell	30300102	Fluoride	16984488	7.8 lb/ton molten Al product	Gaseous fluoride, spray tower, based on test data	97
Primary aluminum production	3334	Horizontal Soderberg stud cell	30300102	Fluoride	16984488	2.7 lb/ton molten Al product	Particulate fluoride, spray tower, based on test data	97
Primary aluminum production	3334	Horizontal Soderberg stud cell	30300102	Fluoride	16984488	0.4 lb/ton molten Al product	Gaseous fluoride, floating bed scrubber, based on test data	97
Primary aluminum production	3334	Horizontal Soderberg stud cell	30300102	Fluoride	16984488	2.4 lb/ton molten Al product	Particulate, floating bed scrubber, based on test data	97
Primary aluminum production	3334	Horizontal Soderberg stud cell	30300102	Fluoride	16984488	0.2 lb/ton molten Al product	Gaseous, scrubber plus ESP, based on test data	97
Primary aluminum production	3334	Horizontal Soderberg stud cell	30300102	Fluoride	16984488	0.2 lb/ton molten Al product	Particulate, scrubber plus ESP, based on test data	97
Primary aluminum production	3334	Horizontal Soderberg stud cell	30300102	Fluoride	16984488	1.0 lb/ton molten Al product	Gaseous, wet ESP, based on test data	97
Primary aluminum production	3334	Horizontal Soderberg stud cell	30300102	Fluoride	16984488	0.2 lb/ton molten Al product	Particulate, wet ESP, based on test data	97
Primary aluminum production	3334	Horizontal Soderberg stud cell	30300102	Fluoride	16984488	0.4 lb/ton molten Al product	Gaseous, dry alumina scrubber, based on test data	97
Primary aluminum production	3334	Horizontal Soderberg stud cell	30300102	Fluoride	16984488	0.2 lb/ton molten Al product	Particulate, dry alumina scrubber, based on test data	97
Primary aluminum production	3334	Prebake cell	30300101	Fluoride	16984488	6.7 lb/ton molten Al product	Gaseous fluoride, based on test data, cross flow packed bed scrubber	97
Primary aluminum production	3334	Prebake cell	30300101	Fluoride	16984488	9.6 lb/ton molten Al product	Particulate fluoride, based on test data, cross flow packed bed scrubber	97
Primary aluminum production	3334	Prebake cell	30300101	Fluoride	16984488	0.4 lb/ton molten Al product	Gaseous fluoride, based on test data, dry plus secondary scrubber	97
Primary aluminum production	3334	Prebake cell	30300101	Fluoride	16984488	0.3 lb/ton molten Al product	Particulate fluoride, based on test data, dry plus secondary scrubber	97
Primary aluminum production	3334	Prebake cell	30300101	Fluoride	16984488	1.4 lb/ton molten Al product	Gaseous fluoride, based on test data, dry ESP and spray tower	97
Primary aluminum production	3334	Prebake cell	30300101	Fluoride	16984488	3.4 lb/ton molten Al product	Particulate fluoride, based on test data, dry ESP and spray tower	97

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Primary aluminum production	3334	Prebake cell	30300101	Fluoride	16984488	1.4 lb/ton molten Al product	Gaseous fluoride, based on test data, spray tower	97
Primary aluminum production	3334	Prebake cell	30300101	Fluoride	16984488	3.8 lb/ton molten Al product	Particulate fluoride, based on test data, spray tower	97
Primary aluminum production	3334	Prebake cell	30300101	Fluoride	16984488	0.8 lb/ton molten Al product	Gaseous fluoride, based on test data, floating bed scrubber	97
Primary aluminum production	3334	Prebake cell	30300101	Fluoride	16984488	3.8 lb/ton molten Al product	Particulate fluoride, based on test data, floating bed scrubber	97
Primary aluminum production	3334	Prebake cell	30300101	Fluoride	16984488	3.4 lb/ton molten Al product	Gaseous fluoride, based on test data, coated bag filter dry scrubber	97
Primary aluminum production	3334	Prebake cell	30300101	Fluoride	16984488	0.4 lb/ton molten Al product	Particulate fluoride, based on test data, coated bag filter dry scrubber	97
Primary aluminum production	3334	Prebake cell	30300101	Fluoride	16984488	24.0 lb/ton molten Al product	Uncontrolled, gaseous fluoride, based on test data	97
Primary aluminum production	3334	Prebake cell	30300101	Fluoride	16984488	20.0 lb/ton molten Al product	Uncontrolled, particulate fluoride, based on test data	97
Primary aluminum production	3334	Prebake cell	30300101	Fluoride	16984488	22.8 lb/ton molten Al product	Gaseous fluoride, based on test data, emissions to collector	97
Primary aluminum production	3334	Prebake cell	30300101	Fluoride	16984488	19.0 lb/ton molten Al product	Particulate fluoride, based on test data, emissions to collector	97
Primary aluminum production	3334	Prebake cell	30300101	Fluoride	16984488	22.8 lb/ton molten Al product	Gaseous fluoride, based on test data, multiple cyclone	97
Primary aluminum production	3334	Prebake cell	30300101	Fluoride	16984488	4.2 lb/ton molten Al product	Particulate fluoride, based on test data, multiple cyclone	97
Primary aluminum production	3334	Prebake cell	30300101	Fluoride	16984488	0.2 lb/ton molten Al product	Gaseous fluoride, based on test data, dry alumina scrubber	97
Primary aluminum production	3334	Prebake cell	30300101	Fluoride	16984488	0.4 lb/ton molten Al product	Particulate fluoride, based on test data, dry alumina scrubber	97
Primary aluminum production	3334	Prebake cell/fugitives	30300108	Fluoride	16984488	1.2 lb/ton molten Al product	Gaseous fluoride, based on test data	97
Primary aluminum production	3334	Prebake cell/fugitives	30300108	Fluoride	16984488	1.0 lb/ton molten Al product	Particulate fluoride, based on test data	97
Primary aluminum production	3334	Vertical Soderberg stud cell	30300103	Fluoride	16984488	33 lb/ton molten Al product	Uncontrolled, gaseous fluoride, based on test data	97

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Primary aluminum production	3334	Vertical Soderberg stud cell	30300103	Fluoride	16984488	11 lb/ton molten Al product	Uncontrolled, particulate fluoride, based on test data	97
Primary aluminum production	3334	Vertical Soderberg stud cell	30300110	Fluoride	16984488	4.9 lb/ton molten Al product	Fugitives, gaseous fluoride, based on test data	97
Primary aluminum production	3334	Vertical Soderberg stud cell	30300110	Fluoride	16984488	1.7 lb/ton molten Al product	Fugitives, particulate fluoride, based on test data	97
Primary aluminum production	3334	Vertical Soderberg stud cell	30300103	Fluoride	16984488	0.3 lb/ton molten Al product	Gaseous fluoride, dry alumina scrubber, based on test data	97
Primary aluminum production	3334	Vertical Soderberg stud cell	30300103	Fluoride	16984488	0.2 lb/ton molten Al product	Particulate fluoride, dry alumina scrubber, based on test data	97
Primary aluminum production	3334	Vertical Soderberg stud cell	30300103	Fluoride	16984488	1.8 lb/ton molten Al product	Gaseous fluoride, scrubber + ESP + spray screen + scrubber, based on test data	97
Primary aluminum production	3334	Vertical Soderberg stud cell	30300103	Fluoride	16984488	1.3 lb/ton molten Al product	Particulate fluoride, scrubber + ESP + spray screen + scrubber, based on test data	97
Primary aluminum production	3334	Vertical Soderberg stud cell	30300103	Fluoride	16984488	28.1 lb/ton molten Al product	Emissions to collector, gaseous fluoride, based on test data	97
Primary aluminum production	3334	Vertical Soderberg stud cell	30300103	Fluoride	16984488	9.3 lb/ton molten Al product	Emissions to collector, gaseous fluoride, based on test data	97
Primary aluminum production	3334	Vertical Soderberg stud cell	30300103	Fluoride	16984488	0.3 lb/ton molten Al product	Gaseous fluoride, spray tower, based on test data	97
Primary aluminum production	3334	Vertical Soderberg stud cell	30300103	Fluoride	16984488	2.3 lb/ton molten Al product	Particulate fluoride, spray tower, based on test data	97
Primary aluminum production	3334	Vertical Soderberg stud cell	30300103	Fluoride	16984488	0.2 lb/ton molten Al product	Gaseous fluoride, venturi scrubber, based on test data	97
Primary aluminum production	3334	Vertical Soderberg stud cell	30300103	Fluoride	16984488	0.4 lb/ton molten Al product	Particulate fluoride, venturi scrubber, based on test data	97
Primary aluminum production	3334	Vertical Soderberg stud cell	30300103	Fluoride	16984488	28.1 lb/ton molten Al product	Gaseous fluoride, multiple cyclones, based on test data	97
Primary aluminum production	3334	Vertical Soderberg stud cell	30300103	Fluoride	16984488	4.7 lb/ton molten Al product	Particulate fluoride, multiple cyclones, based on test data	97
Primary aluminum production	3334	Horizontal soderburg stud - fugitive	30300109	Hydrogen fluoride	7664393	2.2 lbs/ton	Based upon rate of production	101
Primary aluminum production	3334	Horizontal Soderberg stud cell	30300102	Hydrogen fluoride	7664393	1.9 lbs/ton	Based upon rate of production	101

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Primary aluminum production	3334	V S S - fugitive emissions	30300110	Hydrogen fluoride	7664393	4.9 lbs/ton	Based upon rate of production	181
Primary aluminum production	3334	Vertical Soderberg stud cell	30300103	Hydrogen fluoride	7664393	0.6 lbs/ton	Based upon rate of production	181
Primary aluminum production	3334	Prebaked fugitive emissions	30300108	Hydrogen fluoride	7664393	1.2 lbs/ton	Based upon rate of production	181
Primary aluminum production	3334	Prebaked reduction cell	30300101	Hydrogen fluoride	7664393	4.9 lbs/ton	Based upon rate of production	181
Primary aluminum production	3334	Anode baking furnace	30300106	Hydrogen fluoride	7664393	0.82 lbs/ton	Based upon rate of production	181
Primary aluminum production	3334	Soderberg potline	303001	Naphthalene	91203	0.648 lb/ton Al produced	Single test report, one plant, controlled, baghouse	91
Primary aluminum production	3334	Soderberg potline	303001	Naphthalene	91203	0.124 lb/ton Al produced	Single test report, one plant, controlled, baghouse, material that escaped primary control system	91
Primary aluminum production	3334	Soderberg potline	303001	Phenol	108952	0.298 lb/ton Al produced	Single test report, one plant, controlled, baghouse	91
Primary aluminum production	3334	Soderberg potline	303001	Phenol	108952	0.21 lb/ton Al produced	Single test report, one plant, controlled, baghouse, material that escaped primary control system	91
Primary aluminum smelting	3334	Anode paste process - mixer	303001	Polycyclic organic matter		575 mg/m3	Uncontrolled	114
Primary aluminum smelting	3334	Anode paste process - pitch melter	303001	Polycyclic organic matter		2752 mg/m3	Uncontrolled	114
Primary aluminum smelting	3334	Anode paste process - briquetting	303001	Polycyclic organic matter		9.2 mg/m3	Uncontrolled	114
Primary aluminum smelting	3334	Horizontal Soderberg pot room - pot gas scrubber	30300102	Polycyclic organic matter		2.04 lb/ton Al		114
Primary aluminum smelting	3334	Vertical Soderberg pot room - pot gas dry scrubber	30300103	Polycyclic organic matter		0.002 lb/ton Al		114
Primary aluminum smelting	3334	Vertical Soderberg pot room - scrubber for ventilation air	30300103	Polycyclic organic matter		0.08 lb/ton Al		114
Primary and secondary zinc oxide production	33	Entire process	3	Zinc	7440666	60 lb/ton produced	Ranges from 20 to 170 lb Zn/ton product, based on industry data from 1960s	189
Primary cadmium smelting	3339	Cadmium casting furnace	303	Cadmium	7440439	<2 lb/ton Cd produced	Uncontrolled, derived from emission factor	43,44,46

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Primary cadmium smelting	3339	Cadmium holding furnace	303	Cadmium	7440439	0.26 lb/ton Cd produced	Uncontrolled, derived from emission factor	43,44,46
Primary cadmium smelting	3339	Cadmium melting furnace	303	Cadmium	7440439	0.26 lb/ton Cd produced	Uncontrolled, derived from emission factor	43,44,46
Primary cadmium smelting	3339	Cadmium melting furnace	303	Cadmium	7440439	<2 lb/ton Cd produced	Controlled with baghouse, derived from emission factor	43,44,46
Primary cadmium smelting	3339	Cadmium melting/casting furnace	303	Cadmium	7440439	<2 lb/ton Cd produced	Controlled with wet scrubber, derived from emission factor	43,44,46
Primary cadmium smelting	3339	Cadmium oxide furnace	303	Cadmium	7440439	4.92 lb/ton Cd produced	Controlled with baghouse, derived from emission factor	43,44,46
Primary cadmium smelting	3339	Cadmium tapping/casting	303	Cadmium	7440439	<2 lb/ton Cd produced	Uncontrolled, derived from emission factor	43,44,46
Primary cadmium smelting	3339	Casting/holding furnace	303	Cadmium	7440439	0.00754 lb/ton Cd produced	Uncontrolled, derived from emission factor	43,44,46
Primary cadmium smelting	3339	Cd baghouse	303	Cadmium	7440439	0.036 lb/ton Cd produced	Derived from emission factors (n = 2)	43,44,46
Primary cadmium smelting	3339	Cd metal powder packaging	303	Cadmium	7440439	0.06 lb/ton Cd produced	Controlled with baghouse, derived from one emission factor	43,44,46
Primary cadmium smelting	3339	Dust charging	303	Cadmium	7440439	0.28 lb/ton Cd produced	Uncontrolled, derived from emission factor	43,44,46
Primary cadmium smelting	3339	Fugitives packing dust collector	303	Cadmium	7440439	0.358 lb/ton Cd produced	Controlled, derived from two emission factors	43,44,46
Primary cadmium smelting	3339	Gypsum storage piles	303	Cadmium	7440439	<2 lb/ton Cd produced	Controlled with dry scrubber, derived from one emission factor	43,44,46
Primary cadmium smelting	3339	Premelt department	303	Cadmium	7440439	2.66 lb/ton Cd produced	Uncontrolled, derived from emission factor	43,44,46
Primary cadmium smelting	3339	Purification department stack	303	Cadmium	7440439	0.01506 lb/ton Cd produced	Uncontrolled, derived from one emission factor	43,44,46
Primary cadmium smelting	3339	Purification sponge tank	303	Cadmium	7440439	0.00754 lb/ton Cd produced	Uncontrolled, derived from one emission factor	43,44,46
Primary cadmium smelting	3339	Solutions heating tank	303	Cadmium	7440439	0.764 lb/ton Cd produced	Uncontrolled, derived from one emission factor	43,44,46
Primary copper smelting	3331	Copper smelter (primary)	303005	Arsenic	7440382	82.5 lb/hr	Range 25-150 lb/hr, emission factor given as mid-range	3
Primary copper smelting	3331	Furnace and fugitives	303005	Arsenic	7440382	0.10 lb/ton Cu produced	Average value, controlled by air curtain secondary hood system, based on one plant only	31
Primary copper smelting	3331	Slag skimming	303005	Arsenic	7440382	0.025 lb/ton slag skimmed	Controlled by air curtain secondary hood system, based on one plant only	31
Primary copper smelting	3331	Concentrate dryer	303005	Copper	7440508	0.1 lb/ton conc. ore processed	Uncontrolled, assume 1% Cu, PM factors, acid plant achieves 99% control, Cu content range <1-47%	53,97
Primary copper smelting	3331	Converter	30300504	Copper	7440508	0.036 lb/ton conc. ore processed	Uncontrolled, assume 0.1% copper, PM factors, acid plant or ESP achieves 99% control	53,97

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Primary copper smelting	3331	Electric furnace	30300510	Copper	7440508	1.0 lb/ton conc. ore processed	Uncontrolled, assume 1% Cu, PM factors, ESP achieves 99% control, Cu content range (1-4)%	83,97
Primary copper smelting	3331	Flash furnace	30300512	Copper	7440508	1.4 lb/ton conc. ore processed	Uncontrolled, assume 1% Cu, PM factors, acid plant achieves 99% control, Cu content range (1-4)%	83,97
Primary copper smelting	3331	Multiple hearth roaster	30300502	Copper	7440508	0.44 lb/ton conc. ore processed	Controlled, based on assumed Cu content & PM fac., ESP achieves 99% control, assume Cu content 1% wt	83,97
Primary copper smelting	3331	Reverberatory furnace	30300507	Copper	7440508	0.5 lb/ton conc. ore processed	Controlled, based on assumed Cu content & PM fac., ESP achieves 99% control, assume Cu content 1% wt	83,97
Primary lead smelting	3339	Entire process	303010	Arsenic	7440382	0.194 lb inorganic As/ton lead produced	Rough estimate only, range 0.028-0.58 lb As/ton lead, fabric filter control	32
Primary lead smelting	3339	Baghouse for sinter crushing and returns	303010	Cadmium	7440439	0.000204 lb/ton Pb produced	Derived from one emission estimate	44,46,97
Primary lead smelting	3339	Blast furnace	30301002	Cadmium	7440439	46.94 lb/ton Pb produced	Uncontrolled, derived from one emission factor	46,97
Primary lead smelting	3339	Blast furnace	303010	Cadmium	7440439	8.28 x 10E-3 lb/ton Pb	Controlled with a baghouse, stack sampling and engineering estimate	38
Primary lead smelting	3339	Dross reverberatory furnace	30301003	Cadmium	7440439	2.4 lb/ton Pb produced	Uncontrolled, derived from one emission factor	46,97
Primary lead smelting	3339	Main stack (exhaust from acid plant and sinter baghouse)	303010	Cadmium	7440439	0.061 lb/ton Pb produced	Derived from one emission estimate	44,46,97
Primary lead smelting	3339	Ore crushing	30301004	Cadmium	7440439	0.755 lb/ton Pb produced	Uncontrolled, derived from one emission factor	46,97
Primary lead smelting	3339	Scrubber for blast furnace charge prep	303010	Cadmium	7440439	2 x 10E-5 - 7 x 10E-5 lb/ton Pb produced	Derived from one emission estimate	44,46,97
Primary lead smelting	3339	Scrubber for sinter prep and returns	303010	Cadmium	7440439	7.6 x 10E-5 - 1.9 x 10E-4 lb/ton Pb prod	Derived from one emission estimate	44,46,97
Primary lead smelting	3339	Sintering (updraft)	303010	Cadmium	7440439	1.278 lb/ton Pb produced	Uncontrolled, derived from one emission factor	46,97
Primary lead smelting	3339	Blast furnace	30301002	Copper	7440508	0.0016 lb/ton Pb produced	Controlled, copper content 0.2%	83
Primary lead smelting	3339	Refining furnace	303010	Copper	7440508	1.36 x 10E-5 lb/ton Pb produced	Controlled, copper content 0.04%	83
Primary lead smelting	3339	Sintering	30301001	Copper	7440508	0.002 lb/ton Pb produced	Controlled, copper content 2%	83
Primary mercury production	3339	Roasting operations	303	Mercury	7439976	0.02 lb/ton ore processed	Uncontrolled, based on stack tests (early 1970s)	113
Primary mercury production	3339	Retort operation	303	Mercury	7439976	0.002 lb/ton ore processed	Uncontrolled, based on stack tests (early 1970s)	113

EMISSION FACTORS

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Primary mercury production	3339	Smelter stack	303	Mercury	7439976	0.32 lb/ton ore processed	Uncontrolled, based on stack tests (early 1970s)	113
Primary nickel ore smelting	3339	Calciners	303	Nickel	7440020	0.46 lb/ton of nickel produced	Controlled by ESP, based on source tests	110
Primary nickel ore smelting	3339	Crusher house	303	Nickel	7440020	0.012-0.092 lb/ton of nickel produced	Controlled by fabric filter, based on source tests	110
Primary nickel ore smelting	3339	Ore smelter/roaster combination	303	Nickel	7440020	0.084-0.092 lb/ton of nickel produced	Controlled by fabric filters, based on source tests	110
Primary nickel ore smelting	3339	Refining furnace	303	Nickel	7440020	0.013 lb/ton of nickel produced	Controlled by fabric filters, based on engineering estimates	110
Primary nickel ore smelting	3339	Rotary dryer	303	Nickel	7440020	0.042-0.56 lb/ton of nickel produced	Controlled by cyclone/scrubber, based on source tests	110
Primary nickel ore smelting	3339	Skip hoists	303	Nickel	7440020	0.027-0.047 lb/ton of nickel produced	Controlled by fabric filters, based on source tests	110
Primary nickel ore smelting	3339	Tay bin	303	Nickel	7440020	0.00065-0.0019 lb/ton nickel produced	Controlled by fabric filter, based on source tests	110
Primary zinc (slab) production	3339	Roaster - electrolytic plant	303030	Copper	7440508	9.0 lb/ton Zn produced	Controlled, copper content 3.7%	83
Primary zinc (slab) production	3339	Roaster - pyrometallurgical plant	303030	Copper	7440508	9.0 lb/ton Zn produced	Controlled, copper content 3.7%	83
Primary zinc (slab) production	3339	Sintering - pyrometallurgical plant	303030	Copper	7440508	0.006 lb/ton Zn produced	Controlled, copper content 0.04%	83
Primary zinc (slab) production	3339	Vertical retorts - pyrometallurgical plant	30303005	Copper	7440508	0.002 lb/ton Zn produced	Controlled, copper content 0.014%	83
Primary zinc oxide production	33	Entire process	3	Zinc oxide	1314132	8 lb/ton production capacity	Controlled, based on ratio of emissions to capacity for one plant	44
Primary zinc production by electrolytic process	3339	Entire process	303030	Zinc	7440666	0.4 lb/ton production capacity	Largely controlled, based on average ratio of emissions to capacity for three plants	44
Primary zinc smelting	333	Coking	303030	Cadmium	7440439	2.24 lb/ton Zn thru	Engineering estimate	38
Primary zinc smelting	333	Electrothermic process	303030	Cadmium	7440439	1.2 x 10E-2 lb/ton Zn produced	Engineering estimate	38
Primary zinc smelting	333	Horizontal retort	303030	Cadmium	7440439	6 x 10E-3 lb/ton Zn produced	Engineering estimate	38
Primary zinc smelting	333	Sintering with cyclone	303030	Cadmium	7440439	6.32 lb/ton Zn thru	Stack sampling	38

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Primary zinc smelting	333	Sintering with cyclone and ESP	303030	Cadmium	7440439	2.16 lb/ton In thru	Stack sampling	38
Primary zinc smelting	333	Vertical retort	303030	Cadmium	7440439	6.8 x 10E-2 lb/ton In thru	Stack sampling	38
Primary zinc smelting	333	Zinc sinter plant	303030	Cadmium	7440439	3.32 lb/ton produced	Controlled with cyclone, calculated from data presented in the reference	48
Primary zinc smelting	333	Zinc sinter plant	303030	Cadmium	7440439	1.648 lb/ton produced	Controlled with cyclone and ESP, calculated from data presented in the reference	48
Primary zinc smelting	333	Zinc smelter total	303030	Cadmium	7440439	0.344 lb/ton	No controls, calculated from data presented in the reference	48
Primary zinc smelting	333	Zinc vertical retort	303030	Cadmium	7440439	0.00268 lb/ton produced	No controls, calculated from data presented in the reference	48
Primary zinc smelting	3339	Entire process	303030	Radionuclides		8.0 nCi U-238/metric ton In	Rough estimate, electrolytic reduction controlled with cyclone and SO2 plant	39
Primary zinc smelting	3339	Entire process	303030	Radionuclides		5.3 nCi U-234/metric ton In	Rough estimate, electrolytic reduction controlled with cyclone and SO2 plant	39
Primary zinc smelting	3339	Entire process	303030	Radionuclides		20 nCi Th-230/metric ton In	Rough estimate, electrolytic reduction controlled with cyclone and SO2 plant	39
Primary zinc smelting	3339	Entire process	303030	Radionuclides		64 nCi Ra-226/metric ton In	Rough estimate, electrolytic reduction controlled with cyclone and SO2 plant	39
Primary zinc smelting	3339	Entire process	303030	Radionuclides		4000 nCi Rn-222/metric ton In	Rough estimate, electrolytic reduction controlled with cyclone and SO2 plant	39
Primary zinc smelting	3339	Entire process	303030	Radionuclides		340 nCi Pb-210/metric ton In	Rough estimate, electrolytic reduction controlled with cyclone and SO2 plant	39
Primary zinc smelting	3339	Entire process	303030	Radionuclides		21 nCi Po-210/metric ton In	Rough estimate, electrolytic reduction controlled with cyclone and SO2 plant	39
Primary zinc smelting	3339	Entire process	303030	Radionuclides		4.8 nCi Th-232/metric ton	Rough estimate, electrolytic reduction controlled with cyclone and SO2 plant	39
Primary zinc smelting	3339	Entire process	303030	Radionuclides		4.8 nCi Th-228/metric ton	Rough estimate, electrolytic reduction controlled with cyclone and SO2 plant	39
Primary zinc smelting	3339	Entire process	303030	Radionuclides		3.7 nCi U-238/metric ton In	Rough estimate, electrolytic reduction, controlled with cyclones, ESP, and SO2 plant	37
Primary zinc smelting	3339	Entire process	303030	Radionuclides		3.7 nCi U-234/metric ton In	Rough estimate, electrolytic reduction, controlled with cyclones, ESP, and SO2 plant	37

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Primary zinc smelting	3339	Entire process	303030	Radionuclides		1.8 nCi Th-230/metric ton In	Rough estimate, electrolytic reduction, controlled with cyclones, ESP, and SO2 plant	37
Primary zinc smelting	3339	Entire process	303030	Radionuclides		2.7 nCi Ra-226/metric ton In	Rough estimate, electrolytic reduction, controlled with cyclones, ESP, and SO2 plant	37
Primary zinc smelting	3339	Entire process	303030	Radionuclides		9.2 nCi Pb-210/metric ton In	Rough estimate, electrolytic reduction, controlled with cyclones, ESP, and SO2 plant	37
Primary zinc smelting	3339	Entire process	303030	Radionuclides		0.92 nCi Po-210/metric ton In	Rough estimate, electrolytic reduction, controlled with cyclones, ESP, and SO2 plant	37
Primary zinc smelting	3339	Entire process	303030	Radionuclides		1.1 nCi Th-232/metric ton In	Rough estimate, electrolytic reduction, controlled with cyclones, ESP, and SO2 plant	37
Primary zinc smelting	3339	Entire process	303030	Radionuclides		1.1 nCi Ra-228/metric ton In	Rough estimate, electrolytic reduction, controlled with cyclones, ESP, and SO2 plant	37
Primary zinc smelting	3339	Entire process	303030	Radionuclides		110 nCi U-238/metric ton In	Rough estimate, controlled with baghouse, fabric filter, acid plant	37
Primary zinc smelting	3339	Entire process	303030	Radionuclides		110 nCi U-234/metric ton In	Rough estimate, controlled with baghouse, fabric filter, acid plant	37
Primary zinc smelting	3339	Entire process	303030	Radionuclides		84 nCi Th-230/metric ton In	Rough estimate, controlled with baghouse, fabric filter, acid plant	37
Primary zinc smelting	3339	Entire process	303030	Radionuclides		83 nCi Ra-226/metric ton In	Rough estimate, controlled with baghouse, fabric filter, acid plant	37
Primary zinc smelting	3339	Entire process	303030	Radionuclides		270 nCi Pb-210/metric ton In	Rough estimate, controlled with baghouse, fabric filter, acid plant	37
Primary zinc smelting	3339	Entire process	303030	Radionuclides		270 nCi Po-210/metric ton In	Rough estimate, controlled with baghouse, fabric filter, acid plant	37
Primary zinc smelting	3339	Entire process	303030	Radionuclides		98 nCi Th-232/metric ton In	Rough estimate, controlled with baghouse, fabric filter, acid plant	37
Primary zinc smelting	3339	Entire process	303030	Radionuclides		98 nCi Ra-228/metric ton In	Rough estimate, controlled with baghouse, fabric filter, acid plant	37
Primary zinc/zinc oxide smelting	333	Calcine handling	303030	Cadmium	7440439	9.8 x 10E-5 lb/ton In produced	Controlled with baghouse, derived from emission factors	43
Primary zinc/zinc oxide smelting	333	Electrolyte cooler	303030	Cadmium	7440439	<2 lb/ton In produced	Controlled with deolster, derived from emission factor	43
Primary zinc/zinc oxide smelting	333	Fume kiln	303030	Cadmium	7440439	0.0060 lb/ton ZnO produced	Controlled with baghouse, derived from emission factor	43

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Primary zinc/zinc oxide smelting	333	Gypsum storage	303030	Cadmium	7440439	<2 lb/ton Zn produced	Uncontrolled, derived from emission factor	43
Primary zinc/zinc oxide smelting	333	Leach residue dryer	303030	Cadmium	7440439	4.4E-4 lb/ton Zn produced	Controlled with baghouse, derived from emission factors	43
Primary zinc/zinc oxide smelting	333	Nuisance dust collector	303030	Cadmium	7440439	<2 lb/ton Zn equivalent produced	Controlled with baghouse, derived from emission factor	43
Primary zinc/zinc oxide smelting	333	Raw material storage - baghouse	303030	Cadmium	7440439	2.4 x 10E-5 lb/ton Zn produced	Derived from emission factors	43
Primary zinc/zinc oxide smelting	333	Raw material storage - dry scrubber	303030	Cadmium	7440439	0.00016 lb/ton Zn equivalent produced	Derived from emission factors	43
Primary zinc/zinc oxide smelting	333	Raw material storage - uncontrolled	303030	Cadmium	7440439	0.001488 lb/ton Zn produced	Derived from emission factors	43
Primary zinc/zinc oxide smelting	333	Refining column	303030	Cadmium	7440439	<2 lb/ton Zn equivalent produced	Controlled with baghouse, derived from emission factors (n = 2)	43
Primary zinc/zinc oxide smelting	333	Roadways	303030	Cadmium	7440439	4.9 x 10E-4 lb/ton Zn produced	Controlled, derived from emission factors (n = 3)	43
Primary zinc/zinc oxide smelting	333	Screening tower	303030	Cadmium	7440439	<2 lb/ton Zn produced	Controlled with baghouse, derived from emission factor	43
Primary zinc/zinc oxide smelting	333	Sinter machine	303030	Cadmium	7440439	0.02036 lb/ton Zn equivalent produced	Controlled with baghouse, derived from emission factors (n = 2)	43
Primary zinc/zinc oxide smelting	333	Sinter sizing/crushing	303030	Cadmium	7440439	0.00324 lb/ton Zn equivalent produced	Controlled with baghouse, derived from emission factor	43
Primary zinc/zinc oxide smelting	333	Waelz kiln fugitives	303030	Cadmium	7440439	<2 lb/ton ZnO produced	Controlled with baghouse, derived from emission factor	43
Primary zinc/zinc oxide smelting	333	Waelz kiln product	303030	Cadmium	7440439	6.6 x 10E-5 lb/ton ZnO produced	Controlled with baghouse, derived from emission factor	43
Primary zinc/zinc oxide smelting	333	Zinc holding furnace	303030	Cadmium	7440439	<2 lb/ton Zn equivalent produced	Controlled with baghouse, derived from emission factor	43
Primary zinc/zinc oxide smelting	333	Zinc ore dryer	303030	Cadmium	7440439	2.2 x 10E-5 lb/ton Zn equivalent prod	Controlled with wet scrubber, derived from emission factor	43
Primary zinc/zinc oxide smelting	333	Zinc dust process	303030	Cadmium	7440439	<2 lb/ton Zn produced	Controlled with baghouse, derived from emission factors	43
Primary zinc/zinc oxide smelting	333	Zinc furnace preheaters	303030	Cadmium	7440439	0.00078 lb/ton Zn equivalent produced	Controlled with baghouse, derived from emission factor	43

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Primary zinc/zinc oxide smelting	333	Zinc melting furnace - baghouse	303030	Cadmium	7440439	<2 lb/ton Zn produced	Derived from emission factors	43
Primary zinc/zinc oxide smelting	333	Zinc metal powder process	303030	Cadmium	7440439	<2 lb/ton Zn produced	Controlled with baghouse, derived from emission factors (n = 3)	43
Primary zinc/zinc oxide smelting	333	Zinc tapping/casting	303030	Cadmium	7440439	<2 lb/ton Zn equivalent produced	Uncontrolled, derived from emission factors	43
Printed circuit board manufacture	3679	Photoresist stripping	40100302	Methylene chloride	75092	1000 lb/ton fresh (virgin) MC used	Uncontrolled, based on material balance	76
Printed circuit board manufacture	3679	Photoresist stripping	40100302	Methylene chloride	75092	1540 lb/ton fresh (virgin) MC used	Controlled by carbon adsorber, based on material balance	76
Propylene glycol production	2869	Fugitive emissions/equipment leaks	301250	Propylene oxide	75569	37037 lb/yr	Based on VOC of 61729 lb/yr (8 pump seals in service) and 60 wt% PO in stream	24
Propylene glycol production	2869	Process vents	301250	Propylene oxide	75569	0.054 lb/ton PO consumed		24
Propylene oxide production	284		30120501	Hydrogen chloride	7647010	7.46 lbs/ton	Control uncertain, based on tests and mass balance	99, 101
Propylene oxide production	2869	Chlorohydrination process, entire process	30120502	Propylene	115071	14 lb/ton PO produced	Uncontrolled, based on test data and engineering judgement, assume all C3 is propylene	84
Propylene oxide production	2869	Peroxidation process, entire process	301208	Propylene	115071	0.88 lb/ton PO produced	Uncontrolled, based on test data and engineering judgement, assume all C3 is propylene	84
Propylene oxide production	2869	Fugitive emissions/equipment leaks	30120580	Propylene oxide	75569	208333 lb/yr	Based on estimated VOC of 729729 lb/yr (91 pump seals in service) and 0.286 wt% PO in stream	24
Propylene oxide production	2869	Storage tank emissions	407	Propylene oxide	75569	0.062 lb/ton PO produced		24
Propylene oxide production by chlorohydrination	2869	Absorption	30120502	Dichloropropane	26638197	14.84 lb/ton produced	Control unclear, based on mass balance and testing	99
Propylene oxide production by chlorohydrination	2869	Absorption	30120502	Ethichlorohydrin	106898	3.48 lb/ton produced	Control unclear, based on mass balance and testing	99
Propylene oxide production by chlorohydrination	2869	Absorption	30120502	Naphthalene	91203	0.16 lb/ton produced	Control unclear, based on mass balance and testing	99
Propylene oxide production by chlorohydrination	2869	Condenser vent	301208	Propylene oxide	75569	0.032 lb/ton propylene oxide produced	Based on VOC of 0.012 lb/ton and range of 89.9-100 wt% PO	24

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Propylene oxide production by chlorohydrination	2869	Reactor vent/saponification column	30120504	Propylene oxide	75569	0.078 lb/ton propylene oxide produced	Based on VOC of 0.084 lb/ton and 90% (wt) PO	24
Propylene oxide production by chlorohydrination	2869	Absorption	30120502	1,1,1-Trichloroethane	7789891	0.61 lb/ton produced	Control unclear, based on mass balance and testing	98
Propylene oxide production, peroxidation process	2869	Condenser vent	301208	Propylene oxide	75569	0.0004 lb/ton propylene oxide produced	Based on weighted VOC average emissions and weight percents PO	24
Propylene oxide production, peroxidation process	2869	Reactor vent/PO stripping	30120504	Propylene oxide	75569	0.038 lb/ton propylene oxide produced		24
Pulp/paper mill, integrated	2621	Bleached Kraft paperboard, coarse papers	307	Chloroform	67663	0.46 lb/ton total products	During wastewater treatment	104
Pulp/paper mill, integrated	2621	Bleached Kraft paperboard, coarse papers	307	Chloroform	67663	0.0018 lb/ton total products	After wastewater treatment	104
Pulp/paper mill, integrated	2621	Dissolving Kraft pulp	307001	Chloroform	67663	0.24 lb/ton total products	During wastewater treatment	104
Pulp/paper mill, integrated	2621	Dissolving Kraft pulp	307001	Chloroform	67663	0.026 lb/ton total products	After wastewater treatment	104
Pulp/paper mill, integrated	2621	Dissolving sulfite pulp	307002	Chloroform	67663	0138 lb/ton total products	During wastewater treatment	104
Pulp/paper mill, integrated	2621	Dissolving sulfite pulp	307002	Chloroform	67663	0.007 lb/ton total products	After wastewater treatment	104
Pulp/paper mill, integrated	2621	Market bleached Kraft pulp	307	Chloroform	67663	0.44 lb/ton total products	During wastewater treatment	104
Pulp/paper mill, integrated	2621	Market bleached Kraft pulp	307	Chloroform	67663	0.0038 lb/ton total products	After wastewater treatment	104
Pulp/paper mill, integrated	2621	Soda and Kraft fine bleached papers	307	Chloroform	67663	0.24 lb/ton total products	During wastewater treatment	104
Pulp/paper mill, integrated	2621	Soda and Kraft fine bleached papers	307	Chloroform	67663	0.0118 lb/ton total products	After wastewater treatment	104
Pulp/paper mill, integrated	2621	Sulfite papergrade pulp and paper	307	Chloroform	67663	0.76 lb/ton total products	During wastewater treatment	104
Pulp/paper mill, integrated	2621	Sulfite papergrade pulp and paper	307	Chloroform	67663	0.148 lb/ton total products	After wastewater treatment	104

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SEE CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Pulp/paper mill, kraft mill paper process	2611	Batch digester (blow)	30700101	Hydrogen sulfide	7783064	0.0-0.2 lb/ton of product	Operating conditions such as combustion temps and fuel types account for the broad range of emis.	9
Pulp/paper mill, kraft mill paper process	2611	Batch digester (relief)	30700101	Hydrogen sulfide	7783064	0.0-0.1 lb/ton of product	Operating conditions such as combustion temps and fuel types account for the broad ranges of emis.	9
Pulp/paper mill, kraft mill paper process	2611	Black liquor oxidation tower	30700109	Hydrogen sulfide	7783064	0.0-0.02 lb/ton of product	Operating conditions such as combustion temps and fuel types account for the broad ranges of emis.	9
Pulp/paper mill, kraft mill paper process	2611	Brown stock washer(s) (hood vent)	30700102	Hydrogen sulfide	7783064	0.0-0.2 lb/ton of product	Operating conditions such as combustion temps and fuel types account for the broad ranges of emis.	9
Pulp/paper mill, kraft mill paper process	2611	Brown stock washer(s) (seal vent)	30700102	Hydrogen sulfide	7783064	0.0-0.02 lb/ton of product	Operating conditions such as combustion temps and fuel types account for the broad ranges of emis.	9
Pulp/paper mill, kraft mill paper process	2611	Continuous digester	30700101	Hydrogen sulfide	7783064	0.0-0.2 lb/ton of product	Operating conditions such as combustion temps and fuel types account for the broad ranges of emis.	9
Pulp/paper mill, kraft mill paper process	2611	Direct contact evap. (oxidized black liquor)	30700109	Hydrogen sulfide	7783064	0.1-2.0 lb/ton of product	Operating conditions such as combustion temps and fuel types account for the broad ranges of emis.	9
Pulp/paper mill, kraft mill paper process	2611	Direct contact evap. (unoxidized black liquor)	30700104	Hydrogen sulfide	7783064	9.0-30.0 lb/ton of product	Operating conditions such as combustion temps and fuel types account for the broad ranges of emis.	9
Pulp/paper mill, kraft mill paper process	2611	Lime kiln and fluidized bed reactor	307001	Hydrogen sulfide	7783064	0.0-3.76 lb/ton of product	Operating conditions such as combustion temps and fuel types account for the broad ranges of emis.	9
Pulp/paper mill, kraft mill paper process	2611	Lime kiln exhaust	30700104	Hydrogen sulfide	7783064	0.0-1.0 lb/ton of product	Operating conditions such as combustion temps and fuel types account for the broad ranges of emis.	9
Pulp/paper mill, kraft mill paper process	2611	Recovery furnace (after direct contact evap.)	30700104	Hydrogen sulfide	7783064	0.0-80.0 lb/ton of product	Operating conditions such as combustion temps and fuel types account for the broad ranges of emis.	9
Pulp/paper mill, kraft mill paper process	2611	Smelt dissolving tank	30700105	Hydrogen sulfide	7783064	0.0-2.0 lb/ton of product	Operating conditions such as combustion temps and fuel types account for the broad ranges of emis.	9
Pulp/paper mill, kraft mill paper process	2611	Tall oil recovery evaporator	30700104	Hydrogen sulfide	7783064	0.1-3.0 lb/ton of product	Operating conditions such as combustion temps and fuel types account for the broad ranges of emis.	9
Pulp/paper mill, kraft paper recovery boilers	26	Stack	307001	Heptachlorodibenzofurans, total		0.16 - 0.50 ng/dscm @ 3% O2	Three locations tested	118
Pulp/paper mill, kraft paper recovery boilers	26	Stack	307001	Heptachlorodibenzo-p-dioxins, total		0.18 - 0.88 ng/dscm @ 3% O2	Three locations tested	118
Pulp/paper mill, kraft paper recovery boilers	26	Stack	307001	Hexachlorodibenzofurans, total		0.07 - 0.09 ng/dscm @ 3% O2	Three locations tested	118
Pulp/paper mill, kraft paper recovery boilers	26	Stack	307001	Hexachlorodibenzo-p-dioxins, total		0.04 - 0.39 ng/dscm @ 3% O2	Three locations tested	118

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Pulp/paper mill, kraft paper recovery boilers	26	Stack	307001	Octachlorodibenzofurans, total		0.07 - 0.13 ng/dscm @ 3% O2	Three locations tested	118
Pulp/paper mill, kraft paper recovery boilers	26	Stack	307001	Octachlorodibenzo-p-dioxins, total		0.49 - 1.4 ng/dscm @ 3% O2	Three locations tested	118
Pulp/paper mill, kraft paper recovery boilers	26	Stack	307001	Pentachlorodibenzofurans, total		Not detectable - 0.46 ng/dscm @ 3% O2	Three locations tested, detection limit <0.1 ng/dscm @ 3% O2	118
Pulp/paper mill, kraft paper recovery boilers	26	Stack	307001	Pentachlorodibenzo-p-dioxins, total		Not detectable - 0.19 ng/dscm @ 3% O2	Three locations tested, detection limit <0.1 ng/dscm @ 3% O2	118
Pulp/paper mill, kraft paper recovery boilers	26	Stack	307001	2,3,7,8-Tetrachlorodibenzofuran		0.01 - 0.02 ng/dscm @ 3% O2	Three locations tested	118
Pulp/paper mill, kraft paper recovery boilers	26	Stack	307001	Tetrachlorodibenzofurans, total		0.13 - 0.46 ng/dscm @ 3% O2	Three locations tested, does not include 2,3,7,8-isomer	118
Pulp/paper mill, kraft paper recovery boilers	26	Stack	307001	2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	Not detectable	Three locations tested, detection limit <0.1 ng/dscm @ 3% O2	118
Pulp/paper mill, kraft paper recovery boilers	26	Stack	307001	Tetrachlorodibenzo-p-dioxins, total		Not detectable - 0.13 ng/dscm @ 3% O2	Three locations tested, detection limit <0.1 ng/dscm @ 3% O2, does not include 2,3,7,8-isomer	118
Pulp/paper mill, kraft pulp	2611	Smelt dissolving tank	30700105	Sodium hydroxide	1310732	4 lb/ton air-dried pulp	Uncontrolled, 8 lb PM/ton air-dried pulp, assume 50% is NaOH	150
Pulp/paper mill, kraft pulp	2611	Smelt dissolving tank	30700105	Sodium hydroxide	1310732	0.025 lb/ton air-dried pulp	Controlled, packed tower, assume 50% of PM is NaOH	150
Pulp/paper mill, kraft pulp	2611	Smelt dissolving tank	30700105	Sodium hydroxide	1310732	0.6 lb/ton air-dried pulp	Controlled, demister pad plus packed tower, assume 90% of PM is NaOH	150
Pulp/paper mill, kraft pulp	2611	Smelt dissolving tank	30700105	Sodium hydroxide	1310732	0.2 lb/ton air-dried pulp	Controlled, demister pad plus shower, assume 50% PM is NaOH	150
Pulp/paper mill, kraft pulp	2611	Smelt dissolving tank	30700105	Sodium hydroxide	1310732	0.5 lb/ton air-dried pulp	Controlled, demister pad, assume 50% PM is NaOH, range 0.026-1.19 lb NaOH/ton air-dried pulp	150
Pulp/paper mill, kraft pulp - sulfite pulping	2611	Brown stock washer	307001	Hydrogen sulfide	7783064	0.02 lb/ton air-dried pulp	Untreated, based on test data	97, 179
Pulp/paper mill, kraft pulp - sulfite pulping	2611	Digester relief and blow tank	30700101	Hydrogen sulfide	7783064	0.03 lb/ton air-dried pulp	Untreated, based on test data	97, 179
Pulp/paper mill, kraft pulp - sulfite pulping	2611	Lime kiln	30700106	Hydrogen sulfide	7783064	0.5 lb/ton air-dried pulp	For untreated, scrubber or ESP	97, 179
Pulp/paper mill, kraft pulp - sulfite pulping	2611	Lime kiln	30700106	Hydrogen sulfide	7783064	0.03 lb/ton air-dried pulp	With efficient mud washing, optimal kiln operation, added caustic to scrubber water	97

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Pulp/paper mill, kraft pulp - sulfite pulping	2611	Multiple effect evaporator	30700103	Hydrogen sulfide	7783064	1.1 lb/ton air-dried pulp	Untreated, based on test data	97, 178
Pulp/paper mill, kraft pulp - sulfite pulping	2611	Noncontact recovery boiler without direct contact evaporator	307001	Hydrogen sulfide	7783064	0.1 lb/ton air-dried pulp	Apply when recovery furnace is operated optimally to control TRS	97, 178
Pulp/paper mill, kraft pulp - sulfite pulping	2611	Recovery boiler and direct evaporator	30700104	Hydrogen sulfide	7783064	12 lb/ton air-dried pulp	For venturi scrubber or ESP, can be reduced 80% with black liquor oxidation	97, 178
Pulp/paper mill, kraft pulp - sulfite pulping	2611	Smelt dissolving tank	30700106	Hydrogen sulfide	7783064	0.3 lb/ton air-dried pulp	For untreated, mesh pad or scrubber, can be lowered if low sulfite water used in tank	97, 178
Pulp/paper mill, kraft pulp - sulfite pulping	2611	Turpentine condenser	30700107	Hydrogen sulfide	7783064	0.01 lb/ton air-dried pulp	Untreated	97, 178
Pulp/paper mill, pulp and paper bleaching	2611	Chlorine dioxide generation		Chlorine	7782505	0.4 lb/ton pulp bleached		133
Pulp/paper mill, pulp and paper bleaching	2611	Entire process		Chlorine	7782505	1 lb/ton pulp bleached		133
Rail tank car cleaning	4741	Entire process	49003	Chlorobenzene	108907	0.0346 lb/tank car	Emission measurement	97
Rail tank car cleaning	4741	Entire process	49003	Coal tar creosote	8001589	0.18 lb/tank car	Emission measurement	97
Rail tank car cleaning	4741	Entire process	49003	1,2-Dichlorobenzene	95501	0.1662 lb/tank car	Emission measurement	97
Rail tank car cleaning	4741	Entire process	490003	Ethylene glycol	107211	0.0007 lb/tank car	Emission measurement	97
Refractory production	3255	Brick firing kilns	305003	Hydrogen fluoride	7664393	0.47-1.0 lbs/ton of brick produced	Uncontrolled emissions, oil or gas firing	183
Refractory production	3297	Fusion casting: crush/size/dry	305	Chromium	7440473	190 lb/ton refractory produced	Uncontrolled, as total chromium	161
Refractory production	3297	Fusion casting: crush/size/dry	305	Chromium	7440473	24 lb/ton refractory produced	Controlled (77%), as total chromium	161
Refractory production	3297	Fusion melting/casting/breakout/ finishing	305	Chromium	7440473	74 lb/ton refractory produced	Uncontrolled, as total chromium	161
Refractory production	3297	Fusion melting/casting/breakout/ finishing	305	Chromium	7440473	18 lb/ton refractory produced	Controlled (77%), as total chromium	161
Refractory production	3297	Pressing process: brick firing kilns	305	Chromium	7440473	0.2 lb/ton refractory produced	Uncontrolled, as total chromium	161
Refractory production	3297	Pressing process: ore crush/size/dry	305	Chromium	7440473	150 lb/ton refractory produced	Uncontrolled, as total chromium, may overstate uncontrolled emissions	161

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Refractory production	3297	Pressing process: ore crush/size/dry	305	Chromium	7440473	84 lb/ton refractory produced	Controlled (44%), as total chromium	161
Refractory production: chrome-magnesite brick	3297	Dryer	305	Chromium	7440473	0.0038 lb/ton raw material processed	Fabric filter, as total chromium, raw material is chrome ore and magnesite	161
Refractory production: chrome-magnesite brick	3297	Ore store/grind/size	305	Chromium	7440473	0.06 lb/ton raw material processed	Fabric filter, as total chromium, range 0.02-0.10, material is chrome ore only	161
Refractory production: chrome-magnesite brick	3297	Press/fin: brick dryer	305	Chromium	7440473	0.00074 lb/ton raw material processed	Scrubber, as total chromium, raw material is magnesite and chrome ore	161
Refractory production: chrome-magnesite brick	3297	Press/fin: brick kiln	305	Chromium	7440473	0.00088 lb/ton raw material processed	Scrubber, as total chromium, raw material is magnesite and chrome ore	161
Refractory production: chrome-magnesite brick	3297	Press/fin: mixer	305	Chromium	7440473	0.0028 lb/ton raw material processed	Fabric filter, as total chromium, raw material is magnesite and chrome ore	161
Refractory production: chrome-magnesite brick	3297	Raw material storage silo	305	Chromium	7440473	0.0084 lb/ton raw material processed	Fabric filter, as total chromium, raw material is chrome ore and magnesite	161
Refractory production: chromic oxide brick	3297	Milling	305	Chromium	7440473	0.96 lb/ton raw material processed	Wet scrubber, as total chromium, raw material is chromic oxide	161
Refractory production: chromic oxide brick	3297	Mixer (pressing process)	305	Chromium	7440473	0.96 lb/ton raw material processed	Wet scrubber, as total chromium, raw material is chromic oxide	161
Refractory production: chromic oxide brick	3297	Spray dryer	305	Chromium	7440473	0.96 lb/ton raw material processed	Fabric filter, as total chromium, raw material is chromic oxide	161
Rotary spin wool glass fiber production	3296	Ductboard production	30501204	Formaldehyde	50000	3.6 lb/ton finished product	Uncontrolled, may not represent all organics in exhaust stream	97
Rotary spin wool glass fiber production	3296	Heavy density product production	30501204	Formaldehyde	50000	0.05 lb/ton finished product	Uncontrolled, may not represent all organics in exhaust stream	97
Rotary spin wool glass fiber production	3296	R-19/R-11 production	30501204	Formaldehyde	50000	0.9 lb/ton finished product	Uncontrolled, may not represent all organics in exhaust stream	97
Rotary spin wool glass fiber production	3296	R-14 product production, curing and cooling	315012	Formaldehyde	50000	0.1 lb/ton finished product	Controlled with a venturi scrubber	173
Rotary spin wool glass fiber production	3296	R-14 product production, forming	315012	Formaldehyde	50000	0.6 lb/ton finished product	Controlled with a venturi scrubber	173
Rotary spin wool glass fiber production	3296	R-19 product production, curing and cooling	315012	Formaldehyde	50000	0.1 lb/ton finished product	Controlled with a wet scrubber	173
Rotary spin wool glass fiber production	3296	R-19 product production, forming	315012	Formaldehyde	50000	0.6 lb/ton finished product	Controlled with a wet scrubber	173

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Rotary spin wool glass fiber production	3296	R-11 product production	315012	Formaldehyde	50000	0.90 lb/ton finished product	Controlled with a wet ESP	173
Rotary spin wool glass fiber production	3296	R-11 product production	315012	Formaldehyde	50000	0.1 lb/ton finished product	Controlled with an HVAF	173
Rotary spin wool glass fiber production	3296	Heavy density insulation production	315012	Formaldehyde	50000	0.6 lb/ton finished product	Controlled with an incineration	173
Rotary spin wool glass fiber production	3296	Ductboard production	315012	Formaldehyde	50000	0.5 lb/ton finished product	Controlled with a wet ESP	173
Rotary spin wool glass fiber production	3296	R-14 product production	315012	Formaldehyde	50000	0.6 lb/ton finished product	Controlled with a wet ESP	173
Rotary spin wool glass fiber production	3296	R-11 product production, forming and curing	315012	Formaldehyde	50000	0.4 lb/ton finished product	Controlled with a wet ESP	173
Rotary spin wool glass fiber production	3296	Cooling process	30501204	Formaldehyde	50000	0.052 lb/ton finished product	Uncontrolled, average emission factor for 4 different sized facilities	173
Rotary spin wool glass fiber production	3296	Curing process	30501204	Formaldehyde	50000	0.30 lb/ton finished product	Uncontrolled, average emission factor for 4 different sized facilities	173
Rotary spin wool glass fiber production	3296	Forming process	30501204	Formaldehyde	50000	3.02 lb/ton finished product	Uncontrolled, average emission factor for 4 different sized facilities	173
Rotary spin wool glass fiber production	3296	Ductboard production	30501204	Phenol	108952	7.68 lb/ton finished product	Uncontrolled, may not represent all organics in exhaust stream	97
Rotary spin wool glass fiber production	3296	Heavy density product production	30501204	Phenol	108952	1.04 lb/ton finished product	Uncontrolled, may not represent all organics in exhaust stream	97
Rotary spin wool glass fiber production	3296	R-11 product production	30501204	Phenol	108952	1.84 lb/ton finished product	Uncontrolled, may not represent all organics in exhaust stream	97
Rotary spin wool glass fiber production	3296	R-19 product production	30501204	Phenol	108952	1.92 lb/ton finished product	Uncontrolled, may not represent all organics in exhaust stream	97
Rotary spin wool glass fiber production	3296	R-14 product production, curing and cooling	315012	Phenol	108952	0.2 lb/ton finished product	Controlled with a venturi scrubber	173
Rotary spin wool glass fiber production	3296	R-14 product production, forming	315012	Phenol	108952	0.7 lb/ton finished product	Controlled with a venturi scrubber	173
Rotary spin wool glass fiber production	3296	R-14 product production, total line	315012	Phenol	108952	0.9 lb/ton finished product	Controlled with a wet scrubber	173
Rotary spin wool glass fiber production	3296	R-14 product production, curing and cooling	315012	Phenol	108952	0.2 lb/ton finished product	Controlled with a wet scrubber	173

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Rotary spin wool glass fiber production	3296	R-14 product production, forming	315012	Phenol	108952	0.7 lb/ton finished product	Controlled with a wet scrubber	173
Rotary spin wool glass fiber production	3296	R-11 product production	315012	Phenol	108952	0.6 lb/ton finished product	Controlled with a HVAP	173
Rotary spin wool glass fiber production	3296	Heavy density insulation production	315012	Phenol	108952	0.7 lb/ton finished product	Controlled with a incinerator	173
Rotary spin wool glass fiber production	3296	Ductboard production	315012	Phenol	108952	3.7 lb/ton finished product	Controlled with a wet ESP	173
Rotary spin wool glass fiber production	3296	R-19 product production	315012	Phenol	108952	1.8 lb/ton finished product	Controlled with a wet ESP	173
Rotary spin wool glass fiber production	3296	R-11 product production, forming and curing	315012	Phenol	108952	1.9 lb/ton finished product	Controlled with a wet ESP	173
Rotary spin wool glass fiber production	3296	Cooling process	30501206	Phenol	108952	0.011 kg/Mg finished product	Uncontrolled, average emission factor for 4 different sized facilities	173
Rotary spin wool glass fiber production	3296	Curing process	30501208	Phenol	108952	0.15 kg/Mg finished product	Uncontrolled, average emission factor for 4 different sized facilities	173
Rotary spin wool glass fiber production	3296	Forming process	30501204	Phenol	108952	1.86 kg/Mg finished product	Uncontrolled, average emission factor for 4 different sized facilities	173
Salicylic acid production (aspirin)	2833	Fugitive emissions	301060	Phenol	108952	0.28 lb/ton used	Free engineering estimates	13
Salicylic acid production (aspirin)	2833	General emissions	301060	Phenol	108952	0.7 lb/ton used	Free engineering estimates	13
Salicylic acid production (aspirin)	2833	Storage	30106010	Phenol	108952	0.02 lb/ton used	Free engineering estimates	13
Scrap tire, open burning		Tires in experimental burn hut		Acenaphthene	83329	3.449 lb/ton	Sum of PAH analy on lig extrat. of XAD-2 test & filter composit, shred condition = 2" by 2" piece, burn rate=1.3 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Acenaphthene	83329	0.334 lb/ton	Sum of PAH analy on lig extrat. of XAD-2 test & filter composit, shred condition = 2" by 2" piece, burn rate=1.1 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Acenaphthene	83329	0.629 lb/ton	Sum of PAH analy on lig extrat. of XAD-2 test & filter composit, shred condition = 2" by 2" piece, burn rate=1.7 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Acenaphthene	83329	0.831 lb/ton	Sum of PAH analy on lig extrat. of XAD-2 test & filter composit, shred condition = 2" by 2" piece, burn rate=2.3 kg/hr, uncontrolled	212

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Scrap tire, open burning		Tires in experimental burn hut		Acenaphthylene	208968	0.747 lb/ton	XAD-2 extracts w/MB analysis, shred condition = 2" by 2" pieces, burn rate = 1.3 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Acenaphthylene	208968	0.804 lb/ton	XAD-2 extracts w/MB analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Acenaphthylene	208968	1.894 lb/ton	XAD-2 extracts w/MB analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 1.7 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Acenaphthylene	208968	0.691 lb/ton	XAD-2 extracts w/MB analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 2.3 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Acenaphthylene	208968	1.274 lb/ton	Sum of PAH analy on liq extrat. of XAD-2 test & filter compont, shred condition = 2" by 2" piece, burn rate=1.3 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Acenaphthylene	208968	0.972 lb/ton	Sum of PAH analy on liq extrat. of XAD-2 test & filter compont, shred condition = 2" by 2" piece, burn rate=1.1 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Acenaphthylene	208968	2.304 lb/ton	Sum of PAH analy on liq extrat. of XAD-2 test & filter compont, shred condition = 2" by 2" piece, burn rate=1.7 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Acenaphthylene	208968	1.140 lb/ton	Sum of PAH analy on liq extrat. of XAD-2 test & filter compont, shred condition = 2" by 2" piece, burn rate=2.3 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Anthracene	120127	1.006 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter compont, shred condition = 2" by 2" piece, burn rate=1.3 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Anthracene	120127	0.0976 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter compont, shred condition = 2" by 2" piece, burn rate=1.1 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Anthracene	120127	0.1926 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter compont, shred condition = 2" by 2" piece, burn rate=1.7 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Anthracene	120127	0.0724 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter compont, shred condition = 2" by 2" piece, burn rate=2.3 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Benz(a)anthracene	56553	0.2374 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter compont, shred condition = 2" by 2" piece, burn rate=1.3 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Benz(a)anthracene	56553	0.172 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter compont, shred condition = 2" by 2" piece, burn rate=1.1 kg/hr, controlled	212

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Scrap tire, open burning		Tires in experimental burn hut		Benz(a)anthracene	56553	0.232 lb/ton tire	Sum of PAH analy on liq extrat. of IAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.7 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Benz(a)anthracene	56553	0.0966 lb/ton tire	Sum of PAH analy on liq extrat. of IAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=2.3 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzaldehyde	100527	1.2706 lb/ton tire	IAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzaldehyde	100527	0.784 lb/ton tire	IAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 1.7 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzaldehyde	100527	0.1972 lb/ton tire	IAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 2.3 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzaldehyde	100527	0.9704 lb/ton tire	VOST samples, burn rate = 1.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzaldehyde	100527	0.484 lb/ton tire	VOST samples, burn rate = 2.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzaldehyde	100527	0.669 lb/ton tire	VOST samples, burn rate = 0.9 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzaldehyde	100527	0.629 lb/ton tire	VOST samples, burn rate = 1.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzaldehyde	100527	0.864 lb/ton tire	VOST samples, burn rate = 1.4 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzaldehyde	100527	0.879 lb/ton tire	VOST samples, burn rate = 0.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzaldehyde	100527	1.736 lb/ton tire	VOST samples, burn rate = 0.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzaldehyde	100527	0.369 lb/ton tire	VOST samples, burn rate = 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzaldehyde	100527	0.579 lb/ton tire	VOST samples, burn rate = 3.9 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzaldehyde	100527	0.414 lb/ton tire	VOST samples, burn rate = 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzaldehyde	100527	0.135 lb/ton tire	VOST samples, burn rate = 2.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzaldehyde	100527	0.348 lb/ton tire	VOST samples, burn rate = 6.63 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Scrap tire, open burning		Tires in experimental burn hut		Benzene	71432	4.102 lb/ton tire	VOST samples, burn rate = 1.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzene	71432	3.337 lb/ton tire	VOST samples, burn rate = 2.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzene	71432	4.708 lb/ton tire	VOST samples, burn rate = 0.9 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzene	71432	3.988 lb/ton tire	VOST samples, burn rate = 1.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzene	71432	4.706 lb/ton tire	VOST samples, burn rate = 1.4 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzene	71432	5.695 lb/ton tire	VOST samples, burn rate = 0.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzene	71432	1.052 lb/ton tire	VOST samples, burn rate = 0.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzene	71432	3.091 lb/ton tire	VOST samples, burn rate = 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzene	71432	3.960 lb/ton tire	VOST samples, burn rate = 3.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzene	71432	4.226 lb/ton tire	VOST samples, burn rate = 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzene	71432	2.082 lb/ton tire	VOST samples, burn rate = 3.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzene	71432	2.381 lb/ton tire	VOST samples, burn rate = 6.63 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1,2-Benzisothiazol-3-one, 1,1-dioxide	81072	0.661 lb/ton tire	XAD-2 extracts w/ME analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzo(a)pyrene	50328	0.258 lb/ton tire	Sum of PAH analy on lic extrat. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.3 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzo(a)pyrene	50328	0.197 lb/ton tire	Sum of PAH analy on lic extrat. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.1 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzo(a)pyrene	50328	0.221 lb/ton tire	Sum of PAH analy on lic extrat. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.7 kg/hr, controlled	212

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Scrap tire, open burning		Tires in experimental burn hut		Benzo(a)pyrene	50328	0.117 lb/ton tire	Sum of PAH analy on liq extrat. of SAD-2 test & filter compsnt. shred condition = 2" by 2" piece, burn rate=2.3 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzo(b)fluoranthene		0.194 lb/ton tire	Sum of PAH analy on liq extrat. of SAD-2 test & filter compsnt. shred condition = 2" by 2" piece, burn rate=1.3 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzo(b)fluoranthene		0.159 lb/ton tire	Sum of PAH analy on liq extrat. of SAD-2 test & filter compsnt. shred condition = 2" by 2" piece, burn rate=1.1 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzo(b)fluoranthene		0.193 lb/ton tire	Sum of PAH analy on liq extrat. of SAD-2 test & filter compsnt. shred condition = 2" by 2" piece, burn rate=1.7 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzo(b)fluoranthene		0.084 lb/ton tire	Sum of PAH analy on liq extrat. of SAD-2 test & filter compsnt. shred condition = 2" by 2" piece, burn rate=2.3 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzodiazine		0.045 lb/ton tire	VOST samples burn rate = 1.5 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzodiazine		0.062 lb/ton tire	VOST samples burn rate = 2.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzodiazine		0.049 lb/ton tire	VOST samples burn rate = 1.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzodiazine		0.051 lb/ton tire	VOST samples burn rate = 1.4 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzodiazine		0.049 lb/ton tire	VOST samples burn rate = 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzodiazine		0.023 lb/ton tire	VOST samples burn rate = 3.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzodiazine		0.042 lb/ton tire	VOST samples burn rate = 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzodiazine		0.028 lb/ton tire	VOST samples burn rate = 2.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzodiazine		0.020 lb/ton tire	VOST samples burn rate = 6.63 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzofuran	271896	0.137 lb/ton tire	VOST samples burn rate = 3.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzofuran	271896	0.044 lb/ton tire	VOST samples burn rate = 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212

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Scrap tire, open burning		Tires in experimental burn hut		Benzofuran	271896	0.104 lb/ton tire	VOST samples burn rate - 6.63 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzo(ghi)perylene	191242	0.253 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter component, shred condition = 2" by 2" piece, burn rate=1.3 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzo(ghi)perylene	191242	0.284 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter component, shred condition = 2" by 2" piece, burn rate=1.1 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzo(ghi)perylene	191242	0.207 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter component, shred condition = 2" by 2" piece, burn rate=1.7 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzo(ghi)perylene	191242	0.056 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter component, shred condition = 2" by 2" piece, burn rate=2.3 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzo(k)fluoranthene	207089	0.219 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter component, shred condition = 2" by 2" piece, burn rate=1.3 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzo(k)fluoranthene	207089	0.178 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter component, shred condition = 2" by 2" piece, burn rate=1.1 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzo(k)fluoranthene	207089	0.210 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter component, shred condition = 2" by 2" piece, burn rate=1.7 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzo(k)fluoranthene	207089	0.086 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter component, shred condition = 2" by 2" piece, burn rate=2.3 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzothiophene	95158	0.064 lb/ton tire	VOST samples burn rate - 1.5 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzothiophene	95158	0.035 lb/ton tire	VOST samples burn rate - 2.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzothiophene	95158	0.022 lb/ton tire	VOST samples burn rate - 1.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzothiophene	95158	0.055 lb/ton tire	VOST samples burn rate - 1.4 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzothiophene	95158	0.164 lb/ton tire	VOST samples burn rate - 0.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzothiophene	95158	0.073 lb/ton tire	VOST samples burn rate - 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212

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INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Scrap tire, open burning		Tires in experimental burn hut		Benzothiophene	95158	0.037 lb/ton tire	VOST samples burn rate = 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Benzothiophene	95158	0.033 lb/ton tire	VOST samples burn rate = 2.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Biphenyl	92524	0.483 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.3 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Biphenyl	92524	0.447 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Biphenyl	92524	0.498 lb/ton tire	XAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 1.7 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Biphenyl	92524	0.147 lb/ton tire	XAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 2.3 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1,3-Butadiene	106990	0.209 lb/ton tire	VOST samples burn rate = 1.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1,3-Butadiene	106990	0.077 lb/ton tire	VOST samples burn rate = 2.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1,3-Butadiene	106990	0.740 lb/ton tire	VOST samples burn rate = 0.9 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1,3-Butadiene	106990	0.421 lb/ton tire	VOST samples burn rate = 1.3 kg/hr, shred condities = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1,3-Butadiene	106990	0.439 lb/ton tire	VOST samples burn rate = 1.4 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1,3-Butadiene	106990	2.950 lb/ton tire	VOST samples burn rate = 0.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1,3-Butadiene	106990	0.392 lb/ton tire	VOST samples burn rate = 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1,3-Butadiene	106990	0.157 lb/ton tire	VOST samples burn rate = 3.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1,3-Butadiene	106990	0.370 lb/ton tire	VOST samples burn rate = 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1,3-Butadiene	106990	0.118 lb/ton tire	VOST samples burn rate = 2.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1,3-Butadiene	106990	0.083 lb/ton tire	VOST samples burn rate = 4.43 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Scrap tire, open burning		Tires in experimental burn hut		Chrysene	218019	0.260 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.3 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Chrysene	218019	0.105 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.1 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Chrysene	218019	0.174 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.7 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Chrysene	218019	0.109 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=2.3 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		1,3-Cyclopentadiene	542927	0.081 lb/ton tire	VOST samples burn rate = 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1,3-Cyclopentadiene	542927	0.190 lb/ton tire	VOST samples burn rate = 3.6 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1,3-Cyclopentadiene	542927	0.134 lb/ton tire	VOST samples burn rate = 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1,3-Cyclopentadiene	542927	0.020 lb/ton tire	VOST samples burn rate = 2.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1,3-Cyclopentadiene	542927	0.168 lb/ton tire	VOST samples burn rate = 4.63 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Dibenz(a,h)anthracene	53703	0.004 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.7 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Dihydroindene	496117	0.146 lb/ton tire	VOST samples burn rate = 0.9 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Dihydroindene	496117	0.048 lb/ton tire	VOST samples burn rate = 1.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Dihydroindene	496117	0.070 lb/ton tire	VOST samples burn rate = 1.4 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Dihydroindene	496117	0.2302 lb/ton tire	VOST samples burn rate = 0.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Dihydroindene	496117	0.404 lb/ton tire	VOST samples burn rate = 0.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Dihydroindene	496117	0.394 lb/ton tire	VOST samples burn rate = 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Scrap tire, open burning		Tires in experimental burn hut		Dihydrazinedone	496117	0.033 lb/ton tire	VOST samples burn rate = 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Ethylbenzene	100414	0.436 lb/ton tire	IAS-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.3 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Ethylbenzene	100414	0.710 lb/ton tire	IAS-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Ethylbenzene	100414	0.494 lb/ton tire	IAS-2 extracts w/MS analysis, chunk condition = 1/4-1/6 of tire, burn rate = 1.7 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Ethylbenzene	100414	0.131 lb/ton tire	IAS-2 extracts w/MS analysis, chunk condition = 1/4-1/6 of tire, burn rate = 2.3 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Ethylbenzene	100414	0.567 lb/ton tire	VOST samples burn rate = 1.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Ethylbenzene	100414	0.263 lb/ton tire	VOST samples burn rate = 2.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Ethylbenzene	100414	0.814 lb/ton tire	VOST samples burn rate = 0.9 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Ethylbenzene	100414	0.406 lb/ton tire	VOST samples burn rate = 1.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Ethylbenzene	100414	0.191 lb/ton tire	VOST samples burn rate = 1.4 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Ethylbenzene	100414	1.341 lb/ton tire	VOST samples burn rate = 0.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Ethylbenzene	100414	4.379 lb/ton tire	VOST samples burn rate = 0.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Ethylbenzene	100414	0.574 lb/ton tire	VOST samples burn rate = 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Ethylbenzene	100414	0.102 lb/ton tire	VOST samples burn rate = 3.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Ethylbenzene	100414	0.212 lb/ton tire	VOST samples burn rate = 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Ethylbenzene	100414	0.093 lb/ton tire	VOST samples burn rate = 2.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Ethylbenzene	100414	0.048 lb/ton tire	VOST samples burn rate = 6.63 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Scrap tire, open burning		Tires in experimental burn hut		Fluoranthene	206440	1.048 lb/ton tire	Sum of PAH analy on liq extrct. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.3 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Fluoranthene	206440	0.786 lb/ton tire	Sum of PAH analy on liq extrct. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.1 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Fluoranthene	206440	0.791 lb/ton tire	Sum of PAH analy on liq extrct. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.7 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Fluoranthene	206440	0.563 lb/ton tire	Sum of PAH analy on liq extrct. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=2.3 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Fluorene	86737	0.722 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.3 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Fluorene	86737	0.521 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Fluorene	86737	0.692 lb/ton tire	XAD-2 extracts w/MS analysis, chunk condition = 1/4-1/6 of tire, burn rate = 1.7 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Fluorene	86737	0.153 lb/ton tire	XAD-2 extracts w/MS analysis, chunk condition = 1/4-1/6 of tire, burn rate = 2.3 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Fluorene	86737	0.438 lb/ton tire	Sum of PAH analy on liq extrct. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.3 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Fluorene	86737	0.309 lb/ton tire	Sum of PAH analy on liq extrct. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.1 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Fluorene	86737	0.494 lb/ton tire	Sum of PAH analy on liq extrct. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.7 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Fluorene	86737	0.347 lb/ton tire	Sum of PAH analy on liq extrct. of XAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=2.3 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Indene	95136	0.7878 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.3 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Indene	95136	0.579 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Indene	95136	1.44 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.7 kg/hr, uncontrolled	212

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Scrap tire, open burning		Tires in experimental burn hut		Indene	95136	0.877 lb/ton tire	IAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 2.3 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Indeno(1,2,3-cd)pyrene	193395	0.193 lb/ton tire	Sum of PAH analy on liq extrat. of IAD-2 test & filter composit, shred condition = 2" by 2" piece, burn rate=1.3 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Indeno(1,2,3-cd)pyrene	193395	0.140 lb/ton tire	Sum of PAH analy on liq extrat. of IAD-2 test & filter composit, shred condition = 2" by 2" piece, burn rate=1.1 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Indeno(1,2,3-cd)pyrene	193395	0.135 lb/ton tire	Sum of PAH analy on liq extrat. of IAD-2 test & filter composit, shred condition = 2" by 2" piece, burn rate=1.7 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Indeno(1,2,3-cd)pyrene	193395	0.070 lb/ton tire	Sum of PAH analy on liq extrat. of IAD-2 test & filter composit, shred condition = 2" by 2" piece, burn rate=2.3 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Limonene	138863	4.129 lb/ton tire	IAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.3 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Limonene	138863	5.198 lb/ton tire	IAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Limonene	138863	0.226 lb/ton tire	IAD-2 extracts w/MS analysis, chunk condition = 1/4-1/6 of tire, burn rate = 1.7 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Limonene	138863	1.716 lb/ton tire	VOST samples burn rate = 1.5 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Limonene	138863	0.748 lb/ton tire	VOST samples burn rate = 2.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Limonene	138863	1.87 lb/ton tire	VOST samples burn rate = 0.9 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Limonene	138863	1.190 lb/ton tire	VOST samples burn rate = 1.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Limonene	138863	1.462 lb/ton tire	VOST samples burn rate = 1.4 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Limonene	138863	3.872 lb/ton tire	VOST samples burn rate = 0.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Limonene	138863	0.232 lb/ton tire	VOST samples burn rate = 0.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Limonene	138863	0.057 lb/ton tire	VOST samples burn rate = 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212

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Scrap tire, open burning		Tires in experimental burn hut		Limonene	138863	0.033 lb/ton tire	VOST samples burn rate = 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Methyl thiophene		0.28 lb/ton tire	VOST samples burn rate = 1.5 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Methyl thiophene		0.051 lb/ton tire	VOST samples burn rate = 0.9 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Methyl thiophene		0.043 lb/ton tire	VOST samples burn rate = 1.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Methyl thiophene		0.049 lb/ton tire	VOST samples burn rate = 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1-Methyl-1-cyclohexene	591491	0.0534 lb/ton tire	VOST samples burn rate = 1.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1-Methyl-1-cyclohexene	591491	0.028 lb/ton tire	VOST samples burn rate = 2.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1-Methyl-1-cyclohexene	591491	0.116 lb/ton tire	VOST samples burn rate = 0.9 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1-Methyl-1-cyclohexene	591491	0.079 lb/ton tire	VOST samples burn rate = 1.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1-Methyl-1-cyclohexene	591491	0.053 lb/ton tire	VOST samples burn rate = 1.4 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1-Methyl-1-cyclohexene	591491	0.191 lb/ton tire	VOST samples burn rate = 0.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1-Methyl-1-cyclohexene	591491	0.248 lb/ton tire	VOST samples burn rate = 0.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1-Methylnaphthalene	90120	0.459 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.3 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		2-Methylnaphthalene	91576	0.981 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.3 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		2-Methylnaphthalene	91576	0.677 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr	212
Scrap tire, open burning		Tires in experimental burn hut		1-Methylnaphthalene	90120	0.451 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		2-Methylnaphthalene	91576	0.747 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr, uncontrolled	212

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Scrap tire, open burning		Tires in experimental burn hut		2-Methylnaphthalene	91576	1.110 lb/ton tire	IAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 1.7 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1-Methylnaphthalene	90120	1.10 lb/ton tire	IAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 1.7 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		2-Methylnaphthalene	91576	0.166 lb/ton tire	IAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 1.7 kg/hr	212
Scrap tire, open burning		Tires in experimental burn hut		1-Methylnaphthalene	90120	0.219 lb/ton tire	IAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 2.3 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		2-Methylnaphthalene	91576	0.291 lb/ton tire	IAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 2.3 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Methylnaphthalene	1321944	0.217 lb/ton tire	VOST samples burn rate = 1.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Methylnaphthalene	1321944	0.290 lb/ton tire	VOST samples burn rate = 2.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Methylnaphthalene	1321944	0.61 lb/ton tire	VOST samples burn rate = 0.9 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Methylnaphthalene	1321944	0.177 lb/ton tire	VOST samples burn rate = 1.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Methylnaphthalene	1321944	0.326 lb/ton tire	VOST samples burn rate = 1.4 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Methylnaphthalene	1321944	0.341 lb/ton tire	VOST samples burn rate = 0.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Methylnaphthalene	1321944	1.06 lb/ton tire	VOST samples burn rate = 0.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Methylnaphthalene	1321944	0.249 lb/ton tire	VOST samples burn rate = 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Methylnaphthalene	1321944	0.433 lb/ton tire	VOST samples burn rate = 3.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Methylnaphthalene	1321944	0.324 lb/ton tire	VOST samples burn rate = 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Methylnaphthalene	1321944	0.139 lb/ton tire	VOST samples burn rate = 2.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Methylnaphthalene	1321944	0.210 lb/ton tire	VOST samples burn rate = 6.63 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Scrap tire, open burning		Tires in experimental burn hut		Naphthalene	91203	2.64 lb/ton tire	IAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.3 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Naphthalene	91203	1.914 lb/ton tire	IAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Naphthalene	91203	4.631 lb/ton tire	IAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 1.7 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Naphthalene	91203	2.180 lb/ton tire	IAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 2.3 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Naphthalene	91203	1.089 lb/ton tire	Sum of PAH analy on lic extrat. of IAD-2 test & filter component, shred condition = 2" by 2" piece, burn rate=1.3 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Naphthalene	91203	0.894 lb/ton tire	Sum of PAH analy on lic extrat. of IAD-2 test & filter component, shred condition = 2" by 2" piece, burn rate=1.1 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Naphthalene	91203	1.827 lb/ton tire	Sum of PAH analy on lic extrat. of IAD-2 test & filter component, shred condition = 2" by 2" piece, burn rate=1.7 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Naphthalene	91203	1.436 lb/ton tire	Sum of PAH analy on lic extrat. of IAD-2 test & filter component, shred condition = 2" by 2" piece, burn rate=2.3 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Naphthalene	91203	1.798 lb/ton tire	VOST samples burn rate = 1.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Naphthalene	91203	2.29 lb/ton tire	VOST samples burn rate = 2.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Naphthalene	91203	0.691 lb/ton tire	VOST samples burn rate = 0.9 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Naphthalene	91203	1.436 lb/ton tire	VOST samples burn rate = 1.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Naphthalene	91203	2.590 lb/ton tire	VOST samples burn rate = 1.4 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Naphthalene	91203	1.142 lb/ton tire	VOST samples burn rate = 0.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Naphthalene	91203	3.467 lb/ton tire	VOST samples burn rate = 0.8 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Naphthalene	91203	1.69 lb/ton tire	VOST samples burn rate = 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Scrap tire, open burning		Tires in experimental burn hut		Naphthalene	91203	3.03 lb/ton tire	VOST samples burn rate = 3.8 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Naphthalene	91203	2.403 lb/ton tire	VOST samples burn rate = 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Naphthalene	91203	1.20 lb/ton tire	VOST samples burn rate = 2.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Naphthalene	91203	1.81 lb/ton tire	VOST samples burn rate = 6.63 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1,3-Pentadiene	504609	2.89 lb/ton tire	VOST samples burn rate = 1.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1,3-Pentadiene	504609	0.707 lb/ton tire	VOST samples burn rate = 2.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1,3-Pentadiene	504609	1.38 lb/ton tire	VOST samples burn rate = 0.9 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1,3-Pentadiene	504609	2.499 lb/ton tire	VOST samples burn rate = 1.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1,3-Pentadiene	504609	2.030 lb/ton tire	VOST samples burn rate = 1.4 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1,3-Pentadiene	504609	4.99 lb/ton tire	VOST samples burn rate = 0.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1,3-Pentadiene	504609	1.194 lb/ton tire	VOST samples burn rate = 0.8 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1,3-Pentadiene	504609	0.322 lb/ton tire	VOST samples burn rate = 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1,3-Pentadiene	504609	0.043 lb/ton tire	VOST samples burn rate = 3.8 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1,3-Pentadiene	504609	0.295 lb/ton tire	VOST samples burn rate = 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		1,3-Pentadiene	504609	0.049 lb/ton tire	VOST samples burn rate = 2.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Phenanthrene	85018	0.788 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.3 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Phenanthrene	85018	0.466 lb/ton tire	XAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 1.7 kg/hr, uncontrolled	212

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Scrap tire, open burning		Tires in experimental burn hut		Phenanthrene	85018	0.270 lb/ton tire	IAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 2.3 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Phenanthrene	85018	0.511 lb/ton tire	Sum of PAH analy on liq extrat. of IAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.3 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Phenanthrene	85018	0.498 lb/ton tire	Sum of PAH analy on liq extrat. of IAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.1 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Phenanthrene	85018	0.583 lb/ton tire	Sum of PAH analy on liq extrat. of IAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=1.7 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Phenanthrene	85018	0.366 lb/ton tire	Sum of PAH analy on liq extrat. of IAD-2 test & filter compont. shred condition = 2" by 2" piece, burn rate=2.3 kg/hr, controlled	212
Scrap tire, open burning		Tires in experimental burn hut		Phenol	108952	1.473 lb/ton tire	IAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.3 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Phenol	108952	1.33 lb/ton tire	IAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Phenol	108952	1.133 lb/ton tire	IAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 1.7 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Phenol	108952	0.334 lb/ton tire	IAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 2.3 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Phenol	108952	0.178 lb/ton tire	VOST samples burn rate = 2.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Phenol	108952	0.007 lb/ton tire	VOST samples burn rate = 6.63 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Propyl benzene	103651	0.369 lb/ton tire	IAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.3 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Propyl benzene	103651	0.502 lb/ton tire	IAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Propyl benzene	103651	0.128 lb/ton tire	VOST samples burn rate = 1.5 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Propyl benzene	103651	0.041 lb/ton tire	VOST samples burn rate = 2.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Propyl benzene	103651	0.149 lb/ton tire	VOST samples burn rate = 0.9 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Scrap tire, open burning		Tires in experimental burn hut		Propyl benzene	103651	0.116 lb/ton tire	VOST samples burn rate - 1.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Propyl benzene	103651	0.148 lb/ton tire	VOST samples burn rate - 1.4 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Propyl benzene	103651	0.425 lb/ton tire	VOST samples burn rate - 0.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Propyl benzene	103651	0.699 lb/ton tire	VOST samples burn rate - 0.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Propyl benzene	103651	0.070 lb/ton tire	VOST samples burn rate - 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Propyl benzene	103651	0.064 lb/ton tire	VOST samples burn rate - 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Propyl benzene	103651	0.010 lb/ton tire	VOST samples burn rate - 2.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Propyl benzene	103651	0.006 lb/ton tire	VOST samples burn rate - 6.63 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Pyrene	129000	0.346 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter component. shred condition = 2" by 2" piece, burn rate=1.3 kg/hr, contolled	212
Scrap tire, open burning		Tires in experimental burn hut		Pyrene	129000	0.260 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter component. shred condition = 2" by 2" piece, burn rate=1.1 kg/hr, contolled	212
Scrap tire, open burning		Tires in experimental burn hut		Pyrene	129000	0.119 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter component. shred condition = 2" by 2" piece, burn rate=1.7 kg/hr, contolled	212
Scrap tire, open burning		Tires in experimental burn hut		Pyrene	129000	0.015 lb/ton tire	Sum of PAH analy on liq extrat. of XAD-2 test & filter component. shred condition = 2" by 2" piece, burn rate=2.3 kg/hr, contolled	212
Scrap tire, open burning		Tires in experimental burn hut		Styrene	100425	1.359 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.3 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Styrene	100425	1.229 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Styrene	100425	1.90 lb/ton tire	XAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 1.7 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Styrene	100425	0.743 lb/ton tire	XAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 2.3 kg/hr, uncontrolled	212

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INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Scrap tire, open burning		Tires in experimental burn hut		Tetraethylbenzene		0.349 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Thiophene	110021	0.086 lb/ton tire	VOST samples burn rate = 1.5 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Thiophene	110021	0.065 lb/ton tire	VOST samples burn rate = 2.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Thiophene	110021	0.114 lb/ton tire	VOST samples burn rate = 1.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Thiophene	110021	0.072 lb/ton tire	VOST samples burn rate = 1.4 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Thiophene	110021	0.823 lb/ton tire	VOST samples burn rate = 0.8 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Thiophene	110021	0.071 lb/ton tire	VOST samples burn rate = 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Toluene	108883	2.858 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.3 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Toluene	108883	2.709 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Toluene	108883	3.599 lb/ton tire	XAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 1.7 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Toluene	108883	1.269 lb/ton tire	XAD-2 extracts w/MS analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 2.3 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Toluene	108883	0.188 lb/ton tire	VOST samples burn rate = 1.5 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Toluene	108883	1.971 lb/ton tire	VOST samples burn rate = 2.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Toluene	108883	3.461 lb/ton tire	VOST samples burn rate = 0.9 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Toluene	108883	1.99 lb/ton tire	VOST samples burn rate = 1.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Toluene	108883	1.89 lb/ton tire	VOST samples burn rate = 1.4 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Toluene	108883	3.18 lb/ton tire	VOST samples burn rate = 0.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Scrap tire, open burning		Tires in experimental burn hut		Toluene	108883	12.12 lb/ton tire	VOST samples burn rate = 0.8 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Toluene	108883	2.061 lb/ton tire	VOST samples burn rate = 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Toluene	108883	1.813 lb/ton tire	VOST samples burn rate = 3.8 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Toluene	108883	1.71 lb/ton tire	VOST samples burn rate = 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Toluene	108883	0.997 lb/ton tire	VOST samples burn rate = 2.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Toluene	108883	0.750 lb/ton tire	VOST samples burn rate = 6.63 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Trichlorofluoroethane	75694	0.064 lb/ton tire	VOST samples burn rate = 3.8 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Trichlorofluoroethane	75694	0.46 lb/ton tire	VOST samples burn rate = 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Trichlorofluoroethane	75694	0.617 lb/ton tire	VOST samples burn rate = 6.63 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Triethylbenzene (mixed isomers)	25551137	0.862 lb/ton tire	XAD-2 extracts w/MB anal.,shred condition =2" by 2"pieces, burn rate = 1.3 kg/hr, uncontrolled, avg of 2 value,, range is 0.624 - 1.101b/ton	212
Scrap tire, open burning		Tires in experimental burn hut		Triethylbenzene (mixed isomers)	25551137	0.651 lb/ton tire	XAD-2 extracts w/MB anal.,shred condition =2" by 2"pieces, burn rate =1.1 kg/hr, uncontrolled,avg.of 2 values, range is 0.580 - 0.723 lb/ton	212
Scrap tire, open burning		Tires in experimental burn hut		Triethylbenzene (mixed isomers)	25551137	0.615 lb/ton tire	XAD-2 extracts w/MB analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 1.7 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Triethylbenzene (mixed isomers)	25551137	0.225 lb/ton tire	XAD-2 extracts w/MB analysis, Chunk condition = 1/4-1/6 of tire, burn rate = 2.3 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Triethylbenzene (mixed isomers)	25551137	0.102 lb/ton tire	VOST samples burn rate = 1.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Triethylbenzene (mixed isomers)	25551137	0.089 lb/ton tire	VOST samples burn rate = 2.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Triethylbenzene (mixed isomers)	25551137	0.202 lb/ton tire	VOST samples burn rate = 0.9 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Triethylbenzene (mixed isomers)	25551137	0.127 lb/ton tire	VOST samples burn rate = 1.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Scrap tire, open burning		Tires in experimental burn hut		Trimethylbenzene (mixed isomers)	25551137	49.09 lb/ton tire	VOST samples burn rate = 1.4 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Trimethylbenzene (mixed isomers)	25551137	0.318 lb/ton tire	VOST samples burn rate = 0.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Trimethylbenzene (mixed isomers)	25551137	0.388 lb/ton tire	VOST samples burn rate = 0.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Trimethylbenzene (mixed isomers)	25551137	0.61 lb/ton tire	VOST samples burn rate = 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Trimethylbenzene (mixed isomers)	25551137	0.61 lb/ton tire	VOST samples burn rate = 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Trimethylbenzene (mixed isomers)	25551137	0.134 lb/ton tire	VOST samples burn rate = 2.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Trimethylbenzene (mixed isomers)	25551137	0.0074 lb/ton tire	VOST samples burn rate = 6.43 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Xylenes (mixed isomers)	1330207	1.448 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.3 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Xylenes (mixed isomers)	1330207	2.092 lb/ton tire	XAD-2 extracts w/MS analysis, shred condition = 2" by 2" pieces, burn rate = 1.1 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Xylenes (mixed isomers)	1330207	1.230 lb/ton tire	XAD-2 extracts w/MS analysis, chunk condition = 1/4-1/6 of tire, burn rate = 1.7 kg/hr, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Xylenes (mixed isomers)	1330207	1.475 lb/ton tire	VOST samples burn rate = 1.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Xylenes (mixed isomers)	1330207	0.962 lb/ton tire	VOST samples burn rate = 2.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Xylenes (mixed isomers)	1330207	2.422 lb/ton tire	VOST samples burn rate = 0.9 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Xylenes (mixed isomers)	1330207	2.130 lb/ton tire	VOST samples burn rate = 1.3 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Xylenes (mixed isomers)	1330207	2.077 lb/ton tire	VOST samples burn rate = 1.4 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Xylenes (mixed isomers)	1330207	3.932 lb/ton tire	VOST samples burn rate = 0.8 kg/hr, shred condition = 2" by 2" piece, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Xylenes (mixed isomers)	1330207	4.438 lb/ton tire	VOST samples burn rate = 0.5 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Scrap tire, open burning		Tires in experimental burn hut		Xylenes (mixed isomers)	1330207	0.909 lb/ton tire	VOST samples burn rate = 1.7 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Xylenes (mixed isomers)	1330207	0.890 lb/ton tire	VOST samples burn rate = 3.8 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Xylenes (mixed isomers)	1330207	0.764 lb/ton tire	VOST samples burn rate = 1.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Xylenes (mixed isomers)	1330207	0.223 lb/ton tire	VOST samples burn rate = 2.27 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Scrap tire, open burning		Tires in experimental burn hut		Xylenes (mixed isomers)	1330207	0.295 lb/ton tire	VOST samples burn rate = 6.63 kg/hr, chunk conditions = 1/4 to 1/6 of a tire, uncontrolled	212
Secondary copper smelting	3341	Cupola	304002	Cadmium	7440439	0.03-0.112 lb/ton Cu produced	Controlled with baghouse, applicable only to facilities whose raw materials contain cadmium	44
Secondary copper smelting	3341	Top-blown rotary converter	304002	Cadmium	7440439	0.00108-0.00314 lb/ton Cu produced	Controlled with baghouse, applicable only to facilities whose raw materials contain cadmium	44
Secondary copper smelting	3341	Total plant emissions	304002	Cadmium	7440439	4 lb/ton of copper scrap	Control status unknown	41
Secondary copper smelting	3341	Cupola - insulated copper wire	30400211	Copper	7440508	1.2 lb/ton material charged	Uncontrolled, copper content 0.5%	93,97
Secondary copper smelting	3341	Cupola - insulated copper wire	30400211	Copper	7440508	0.05 lb/ton material charged	ESP, copper content 0.5%	93,97
Secondary copper smelting	3341	Cupola - scrap copper/brass	30400212	Copper	7440508	0.36 lb/ton material charged	Uncontrolled, estimated copper 0.5%	93,97
Secondary copper smelting	3341	Cupola - scrap copper/brass	30400212	Copper	7440508	0.012 lb/ton material charged	Estimated copper 0.5%, ESP	93,97
Secondary copper smelting	3341	Reverberatory furnace - brass/bronze	30400215	Copper	7440508	3.6 lb/ton material charged	None, copper content 9.9%	93,97
Secondary copper smelting	3341	Reverberatory furnace - brass/bronze	30400215	Copper	7440508	0.26 lb/ton material charged	Baghouse, copper content 9.9%	93,97
Secondary copper smelting	3341	Stack	304002	Heptachlorodibenzofurans, total		11,000 ng/dscm @ 3% O2	Estimated value from stack test results	118
Secondary copper smelting	3341	Stack	304002	Hexachlorodibenzofurans, total		6000 ng/dscm @ 3% O2	Estimated value from stack test results	118
Secondary copper smelting	3341	Stack	304003	Hexachlorodibenzo-p-dioxins, total		2200 ng/dscm @ 3% O2	Estimated value from stack test results	118
Secondary copper smelting	3341	Stack	304002	Octachlorodibenzofurans, total		7200 ng/dscm @ 3% O2	Estimated value from stack test results	118

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Secondary copper smelting	3341	Stack	304002	Octachlorodibenzo-p-dioxins, total		3700 ng/dscm @ 3% O2	Estimated value from stack test results	115
Secondary copper smelting	3341	Stack	304002	Pentachlorodibenzofurans, total		19,000 ng/dscm @ 3% O2	Estimated value from stack test results	115
Secondary copper smelting	3341	Stack	304002	Pentachlorodibenzo-p-dioxins, total		2300 ng/dscm @ 3% O2	Estimated value from stack test results	115
Secondary copper smelting	3341	Stack	304002	2,3,7,8-Tetrachlorodibenzofuran		5100 ng/dscm @ 3% O2	Estimated value from stack test results	115
Secondary copper smelting	3341	Stack	304002	Tetrachlorodibenzofurans, total		18,000 ng/dscm @ 3% O2	Estimated value from stack test results, does not include 2,3,7,8-isomer	115
Secondary copper smelting	3341	Stack	304002	2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	170 ng/dscm @ 3% O2	Estimated value from stack test results	115
Secondary copper smelting	3341	Stack	304002	Tetrachlorodibenzo-p-dioxins, total		1400 ng/dscm @ 3% O2	Estimated value from stack test results, does not include 2,3,7,8-isomer	115
Secondary copper smelting	334'	Stack	304002	Heptachlorodibenzo-p-dioxins, total		5900 ng/dscm @ 3% O2	Estimated value from stack test results	115
Secondary fiber mills	2611	Deink - fine papers	307	Chloroform	67663	0.72 lb/ton total products	During wastewater treatment	164
Secondary fiber mills	2611	Deink - fine papers	307	Chloroform	67663	0.026 lb/ton total products	After wastewater treatment	164
Secondary fiber mills	2611	Deink - tissue papers	307	Chloroform	67663	0.32 lb/ton total products	During wastewater treatment	164
Secondary fiber mills	2611	Deink - tissue papers	307	Chloroform	67663	0.0134 lb/ton total products	After wastewater treatment	164
Secondary iron and steel production	332	Basic oxygen furnace	304	Cadmium	7440439	4.1 x 10E-5 lb/ton steel	Uncontrolled, based on Cd content in feed, fuel, or emissions	38
Secondary iron and steel production	332	Basic oxygen furnace	304	Cadmium	7440439	2.79 x 10E-5 lb/ton steel	Controlled with venturi scrubber or ESP	38
Secondary iron and steel production	332	Electric arc furnace	304	Cadmium	7440439	3.4 x 10E-3 lb/ton steel	Engineering estimate, stack test, concentration of Cd in fuel, feed, or emissions	38
Secondary iron and steel production	332	Open hearth furnace	304	Cadmium	7440439	5.78 x 10E-3 lb/ton steel	Uncontrolled, stack sampling	38
Secondary iron and steel production	332	Open hearth furnace	304	Cadmium	7440439	1.1 x 10E-4 lb/ton steel	Controlled with ESP, stack sampling	38

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INDUSTRIAL PROCESS	EIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Secondary iron and steel production	332	Sintering operations, windbox exhaust	304	Cadmium	7440439	2 x 10E-3 lb/ton feed	Uncontrolled	38
Secondary iron and steel production	332	Sintering operations, windbox exhaust	304	Cadmium	7440439	7.8 x 10E-4 lb/ton feed	Controlled with rotoclone and ESP	38
Secondary lead smelting	3341	Area emission - material storage and hauling roads	304004	Arsenic	7440382	0.12 lb/ton lead produced	For small smelter	32
Secondary lead smelting	3341	Blast and reverberatory furnaces	304004	Arsenic	7440382	0.0044 lb/ton lead produced	Average rate, controlled with fabric filter	30
Secondary lead smelting	3341	Blast and reverberatory furnaces	304004	Arsenic	7440382	0.0028 lb/ton lead produced	Average rate, controlled with fabric filter and wet scrubber	30
Secondary lead smelting	3341	Blast and reverberatory furnaces	304004	Arsenic	7440382	0.072 lb/ton lead produced	For small smelter, control with fabric filter	32
Secondary lead smelting	3341	Fugitives - furnace charging and tapping	304004	Arsenic	7440382	0.054 lb/ton lead produced	For small smelter, control with fabric filter	32
Secondary lead smelting	3341	Special battery smelting furnace and fugitives	304005	Arsenic	7440382	4.2 x 10E-4 lb/ton lead produced	Average proc. and fugitive factor, controlled by fabric filter	30
Secondary lead smelting	3341	Blast furnace	30400403	Cadmium	7440439	2 x 10E-6 lb/ton Pb	Controlled with three cyclones + baghouse stack sampling + engineering estimate	38
Secondary lead smelting	3341	Reverberatory furnace	30400402	Cadmium	7440439	1.6 x 10E-6 lb/ton Pb	Controlled with cyclone + baghouse stack sampling + engineering estimate	38
Secondary lead smelting	3341	Reverberatory furnace	30400402	Cadmium	7440439	5 x 10E-7 lb/ton Pb	Controlled with three cyclones and baghouse	38
Secondary lead smelting	3341	Blast furnace	30400403	Lead	7439921	1.48 lbs/ton lead	Controlled by an afterburner and baghouse, range is 0.022 - 4.875 lbs/ton	199
Secondary lead smelting	3341	Reverberatory furnace	30400402	Lead	7439921	0.033 lbs/ton lead	Controlled by a baghouse, range of 4 tests is 0.026 - 0.054 lbs/ton	199
Secondary lead smelting	3341	Blast furnace	30400403	Lead	7439921	0.085 lbs/ton lead	Controlled by venturi scrubber, range is 0.054 - 0.110 lbs/ton	199
Secondary lead smelting	3341	Blast and reverberatory furnaces	30400403	Lead	7439921	0.0094 lbs/ton lead	Controlled by an afterburner, baghouse, and venturi scrubber, range is 0.0047 - 0.0145 lbs/ton	199
Secondary lead smelting	3341	Secondary smelter	30400403	Polycyclic organic matter		1107 ng/Nm3	Controlled, device not specified, average of 4 tests, smelter processing batteries	114
Secondary mercury production	3341	Entire process	304	Mercury	7439976	40 lb/ton Hg processed	Uncontrolled, based on engineering judgement	113
Secondary mercury production	3341	Entire process, production by vacuum distillation	304	Mercury	7439976	0.052 lb/ton of Hg produced	Control status and basis unspecified	112

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Secondary processing of nickel-bearing scrap	3341	Cast iron scrap melting furnaces	304010	Nickel	7440020	20 lb/ton of nickel charged	Uncontrolled, based on engineering judgement	110
Secondary processing of nickel-bearing scrap	3341	Copper base alloy scrap melting furnaces	304010	Nickel	7440020	2 lb/ton of nickel charged	Controlled, based on engineering judgement	110
Secondary processing of nickel-bearing scrap	3341	Electrical alloy scrap melting furnaces	304010	Nickel	7440020	2 lb/ton of nickel charged	Controlled, based on engineering judgement	110
Secondary processing of nickel-bearing scrap	3341	Iron and steel scrap melting furnace	304010	Nickel	7440020	0.0018 lb/ton of iron and steel produced	Controlled, based on material balance	110
Secondary processing of nickel-bearing scrap	3341	Nickel alloy steel scrap melting furnace	304010	Nickel	7440020	10 lb/ton of nickel charged	Controlled, based on material balance	110
Secondary processing of nickel-bearing scrap	3341	Other nickel alloy scrap melting furnace	304010	Nickel	7440020	2 lb/ton of nickel charged	Controlled, based on engineering judgement	110
Secondary processing of nickel-bearing scrap	3341	Stainless steel scrap melting furnace	304010	Nickel	7440020	10 lb/ton of nickel charged	Controlled, based on questionnaire survey results	110
Secondary processing of nickel-bearing scrap	3341	Stainless steel scrap melting furnace	304010	Nickel	7440020	0.6 lb/ton of steel produced	Controlled, based on questionnaire survey results	110
Secondary zinc smelting	3341	Total plant emissions	304008	Cadmium	7440439	0.01 lb/ton In produced	Uncontrolled	38
Secondary zinc smelting	3341	Entire process	304008	Zinc	7440666	20 lb/ton produced	Based on industry data from 1980s, ranges from 0.01 to 124 lb/ton	189
Secondary zinc smelting	3341	Kettle sweating	30400814	Zinc oxide	1314132	0.28 lb/ton product	Based on 0.84 lb/t x 50% wt. ZnO in PM, fugitive	97
Sewage sludge incineration		Multiple hearth furnace	501	Arsenic	7440382	0.000 - 0.021 lbs/ton dry sludge	Controlled by wet scrubber, average of 8 tests was 0.0043 lbs/ton	203
Sewage sludge incineration		Fluidized-bed furnace	501	Arsenic	7440382	0.0007 lbs/ton dry sludge	Uncontrolled emissions, single test	203
Sewage sludge incineration		Multiple hearth furnace	501	Arsenic	7440382	0.0004 - 0.44 lbs/ton dry sludge	Uncontrolled emissions, average of 9 tests was 0.13 lbs/ton	203
Sewage sludge incineration		Fluidized-bed furnace	501	Cadmium	7440439	0.000 - 0.0003 lbs/ton dry sludge	Controlled by wet scrubber	203
Sewage sludge incineration		Fluidized-bed furnace	501	Cadmium	7440439	0.0016 lbs/ton dry sludge	Uncontrolled emissions, single test	203
Sewage sludge incineration		Multiple hearth furnace	501	Cadmium	7440439	0.005 - 0.071 lbs/ton dry sludge	Uncontrolled emissions, average of 9 tests was 0.038 lbs/ton	203
Sewage sludge incineration		Multiple hearth furnace	501	Cadmium	7440439	0.0009 - 0.062 lbs/ton dry sludge	Controlled by wet scrubber, average of 10 tests was 0.012 lbs/ton	203

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Sewage sludge incineration		Fluidized-bed furnace	501	Chromium	7440473	0.0002 - 0.0004 lbs/ton dry sludge	Controlled by wet scrubber	203
Sewage sludge incineration		Fluidized-bed furnace	501	Chromium	7440473	0.013 lbs/ton dry sludge	Uncontrolled emissions, single test	203
Sewage sludge incineration		Multiple hearth furnace	501	Chromium	7440473	0.007 - 0.43 lbs/ton dry sludge	Uncontrolled emissions, average of 6 tests was 0.21 lbs/ton	203
Sewage sludge incineration		Multiple hearth furnace	501	Chromium	7440473	0.0003 - 0.0078 lbs/ton dry sludge	Controlled by wet scrubber, average of 8 tests was 0.0052 lbs/ton	203
Sewage sludge incineration		Fluidized-bed furnace	501	Lead	7439921	0.0002 - 0.009 lbs/ton dry sludge	Controlled by wet scrubber	203
Sewage sludge incineration		Fluidized-bed furnace	501	Lead	7439921	0.052 lbs/ton dry sludge	Uncontrolled emissions, single test	203
Sewage sludge incineration		Multiple hearth furnace	501	Lead	7439921	0.026 - 1.77 lbs/ton dry sludge	Uncontrolled emissions, average of 5 tests was 0.53 lbs/ton	203
Sewage sludge incineration	49	Stack	5	Heptachlorodibenzofurans, total		Not detectable - 60 ng/dscm @ 3% O2	Three locations tested, does not include 2,3,7,8-isomer, detection limit <0.1 ng/dscm @ 3% O2	118
Sewage sludge incineration	49	Stack	5	Heptachlorodibenzo-p-dioxins, total		0.22 - 21 ng/dscm @ 3% O2	Three locations tested	118
Sewage sludge incineration	49	Stack	5	Hexachlorodibenzofurans, total		0.10 - 32 ng/dscm @ 3% O2	Three locations tested, does not include 2,3,7,8-isomer	118
Sewage sludge incineration	49	Stack	5	Hexachlorodibenzo-p-dioxins, total		Not detectable - 7.0 ng/dscm @ 3% O2	Three locations tested, detection limit <0.1 ng/dscm @ 3% O2	118
Sewage sludge incineration	49	Stack	5	Octachlorodibenzofurans, total		0.07 - 45 ng/dscm @ 3% O2	Three locations tested	118
Sewage sludge incineration	49	Stack	5	Octachlorodibenzo-p-dioxins, total		0.90 - 15 ng/dscm @ 3% O2	Three locations tested	118
Sewage sludge incineration	49	Stack	5	Pentachlorodibenzofurans, total		4.8 - 110 ng/dscm @ 3% O2	Three locations tested, does not include 2,3,7,8-isomer	118
Sewage sludge incineration	49	Stack	5	Pentachlorodibenzo-p-dioxins, total		Not detectable - 1.1 ng/dscm @ 3% O2	Three locations tested, detection limit <0.1 ng/dscm @ 3% O2	118
Sewage sludge incineration	49	Stack	5	2,3,7,8-Tetrachlorodibenzofuran		2.1 - 54 ng/dscm @ 3% O2	Two locations tested	118
Sewage sludge incineration	49	Stack	5	Tetrachlorodibenzofurans, total		19 - 150 ng/dscm @ 3% O2	Three locations tested, does not include 2,3,7,8-isomer	118

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Sewage sludge incineration	49	Stack	5	2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	Not detectable - 0.14 ng/dscm @ 3% O2	Three locations tested, detection limit (0.1 ng/dscm @ 3% O2	118
Sewage sludge incineration	49	Stack	5	Tetrachlorodibenzo-p-dioxins, total		0.40 - 11 ng/dscm @ 3% O2	Three locations tested, does not include 2,3,7,8-isomer	118
Sewage sludge incineration	495	Multiple hearth - flue gas	5	Polychlorinated dibenzofurans, total		501 - 2248 ng/m3	Controlled with a water scrubber, total of three samples	119
Sewage sludge incineration	495	Multiple hearth - flue gas	5	Polychlorinated dibenzo-p-dioxins, total		483 - 1140 ng/m3	Controlled with a water scrubber, total of three samples	119
Sewage sludge incineration	4952	Incinerator	5	Benzo(a)pyrene	50328	8 x 10E-6 lb/ton dry sludge feed	Average of 2 x 10E-4, 1.4 x 10E-5, 2 incinerators each with wet scrubber, 1 common stack	114
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	Acetonitrile	75058	0.02142 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	Acetonitrile	75058	0.00158 lb/ton dry sludge	One test, scrubber and afterburner, better operating conditions	101
Sewage sludge incineration	4953	Fluidized-bed furnace	50100504	Acrylonitrile	107131	<6 x 10E-5 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	Acrylonitrile	107131	0.0326 lb/ton dry sludge	Average of four tests, scrubber	101
Sewage sludge incineration	4953	Fluidized-bed furnace	50100504	Aldrin	309002	<7.6 x 10E-5 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	Aldrin	309002	<4.6 x 10E-5 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Fluidized-bed furnace	50100504	Arsenic	7440382	0.00012 lb/ton dry sludge	Average of two tests, venturi and impingement scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	Arsenic	7440382	0.003 lb/ton dry sludge	Average of ten tests, scrubber	101
Sewage sludge incineration	4953	Fluidized-bed furnace	50100506	Benzene	71432	8 x 10E-4 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	Benzene	71432	0.0204 lb/ton dry sludge	Average of five tests, scrubber	101
Sewage sludge incineration	4953	Stack gases	50200504	Benzene	71432	5-31 ug/dscm	Emission tests using volatile organic sampling train	132
Sewage sludge incineration	4953	Fluidized-bed furnace	50100504	Beryllium	7440417	<2 x 10E-4 lb/ton dry sludge	One test, scrubber	101

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	Beryllium	7440417	<2 x 10E-4 lb/ton dry sludge	Average of two tests, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	Bromodichloromethane	75274	0.003 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Fluidized-bed furnace	50100504	Cadmium	7440439	0.00148 lb/ton dry sludge	Average of three tests, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	Cadmium	7440439	0.0198 lb/ton dry sludge	Average of 13 tests, scrubber, range 2.2 x 10E-4 - 0.126	101
Sewage sludge incineration	4953	Fluidized-bed furnace	50100504	Carbon tetrachloride	56235	2 x 10E-5 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	Carbon tetrachloride	56235	1 x 10E-4 lb/ton dry sludge	Average of five tests, scrubber	101
Sewage sludge incineration	4953	Fluidized-bed furnace	50100504	Chlordane	57749	<0.001126 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	Chlordane	57749	<6.8 x 10E-4 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Fluidized-bed furnace	50100504	Chlorobenzene	108907	2 x 10E-5 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Multiple hearth incinerator	50100504	Chlorobenzene	108907	0.0024 lb/ton dry sludge	Average of five tests, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	Chloroethane	75003	0.0016 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Fluidized-bed furnace	50100504	Chloroform	67663	0.00776 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	Chloroform	67663	0.0072 lb/ton dry sludge	Average of six tests, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	Chloromethane	74873	0.01032 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Fluidized-bed furnace	50100504	2-Chlorophenol	95578	<4 x 10E-5 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	2-Chlorophenol	95578	<2.4 x 10E-5 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Fluidized bed	50100504	Chromium	7440473	0.0004 lb/ton solid waste incinerated	Wet scrubber, as total chromium	141

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Sewage sludge incineration	4953	Fluidized-bed furnace	50100504	Chromium	7440473	9.2 x 10E-4 lb/ton dry sludge	Average of three tests, scrubber, total chromium	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	Chromium	7440473	0.00808 lb/ton dry sludge	Average of 13 tests, scrubber, total chromium	101
Sewage sludge incineration	4953	Multiple hearth incinerator	50100504	Chromium	7440473	0.0154 lb/ton solid waste incinerated	Controlled, as total chromium	101
Sewage sludge incineration	4953	Fluidized-bed furnace	50100504	Copper	7440508	6.2 x 10E-4 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	Copper	7440508	0.0218 lb/ton dry sludge	Average of five tests, scrubber	101
Sewage sludge incineration	4953	Fluidized-bed furnace	50100504	1,4-Dichlorobenzene	106467	<3.8 x 10E-5 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	1,4-Dichlorobenzene	106467	0.012138 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Fluidized-bed furnace	50100504	1,3-Dichlorobenzene	541731	<3.8 x 10E-5 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	1,3-Dichlorobenzene	541731	0.0026 lb/ton dry sludge	Average of two tests, scrubber	101
Sewage sludge incineration	4953	Fluidized-bed furnace	50100504	1,2-Dichlorobenzene	95501	<3.8 x 10E-5 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	1,2-Dichlorobenzene	95501	0.0034 lb/ton dry sludge	Average of two tests, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	Dichlorodibenzodioxins, total		1.39 x 10E-7 lb/ton dry sludge	Average of two tests, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	Dichlorodibenzofurans, total		8.474 x 10E-7 lb/ton dry sludge	Average of two tests, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	1,1-Dichloroethane	75343	4.6 x 10E-4 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Fluidized-bed furnace	50100504	1,2-Dichloroethane	107062	1 x 10E-5 lb/ton dry sludge	One test, scrubber, both isomers	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	1,2-Dichloroethane	107062	0.0018 lb/ton dry sludge	Two tests, scrubber, both isomers	101
Sewage sludge incineration	4953	Fluidized-bed furnace	50100504	2,4-Dichlorophenol	120832	<7.6 x 10E-5 lb/ton dry sludge	One test, scrubber	101

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	2,4-Dichlorophenol	120832	<4.6 x 10E-8 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Fluidized-bed furnace	50100504	2,4-Diethylphenol	105679	<8.4 x 10E-8 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	2,4-Diethylphenol	105679	<3.4 x 10E-8 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Fluidized-bed furnace	50100504	4,6-Dinitro-o-cresol	534521	<9.4 x 10E-8 lb/ton sludge	One test, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	4,6-Dinitro-o-cresol	534521	<3.82 x 10E-4 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Fluidized-bed furnace	50100504	2,4-Dinitrophenol	51285	<0.001372 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Fluidized-bed furnace	50100504	Dioctyl phthalate	117817	5.32 x 10E-4 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	Dioctyl phthalate	117817	0.0028 lb/ton dry sludge	Average of two tests, scrubber	101
Sewage sludge incineration	4953	Fluidized-bed furnace	50100504	Ethylbenzene	100414	4 x 10E-5 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	Ethylbenzene	100414	0.0027 lb/ton dry sludge	Five tests, scrubber	101
Sewage sludge incineration	4953	Incinerator stack	50100504	Hydrogen chloride	7647010	1.5 lb/ton dried sludge	Uncontrolled	97
Sewage sludge incineration	4953	Incinerator stack	50100504	Hydrogen chloride	7647010	0.3 lb/ton dried sludge	Scrubber	97
Sewage sludge incineration	4953	Stack, fluidized-bed	50100504	Manganese	7439965	0.0006 lb/ton of waste incinerated	Controlled by wet scrubber, based on emission tests	107
Sewage sludge incineration	4953	Stack, multiple-hearth	50100504	Manganese	7439965	0.004 lb/ton of waste incinerated	Controlled by wet scrubber, based on emission tests	107
Sewage sludge incineration	4953	Stack	50100504	Mercury	7439976	0.0014 lb/ton dry sludge	Assumes 100% emitted, conventional scrubbers have low Hg concentration efficiency	155
Sewage sludge incineration	4953	Sludge incineration furnace	50100504	Mercury	7439976	0.0070 - 0.006 lb/ton dry sludge incin.	Water scrubber ctrl, eff ranging from 48-96%, avg 5 tests 1.49 g/Metric ton dry sludge incinerated	197
Sewage sludge incineration	4953	Incinerator		Mercury	7439976	0.0039 lb/ton sludge charged	Unspecified, emission factor is average for 25 facilities	198

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	Methyl ethyl ketone	78933	0.01076 lb/ton dry sludge	Average of three tests, scrubber	101
Sewage sludge incineration	4953	Fluidized-bed furnace	50100504	Methylene chloride	75092	1.4 x 10E-4 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	Methylene chloride	75092	0.0046 lb/ton dry sludge	Average of five tests, scrubber	101
Sewage sludge incineration	4953	Fluidized-bed furnace	50100504	4-Methyl-2-nitrophenol	119338	<9.4 x 10E-5 lb/ton sludge	One test, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	4-Methyl-2-nitrophenol	119335	<8.6 x 10E-5 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	Monochlorodibenzofurans, total		0 x 10E-8 lb/ton dry sludge	Average of two tests, scrubber	101
Sewage sludge incineration	4953	Fluidized bed	50100504	Nickel	7440020	0.0003 lb/ton of solid waste incinerated	Controlled by wet scrubber, calculated based on source tests	110, 203
Sewage sludge incineration	4953	Fluidized bed	50100504	Nickel	7440020	0.15 lb/ton of solid waste incinerated	Uncontrolled, calculated based on source tests	110
Sewage sludge incineration	4953	Fluidized-bed furnace	50100504	Nickel	7440020	0.06 lb/ton dry sludge	Average of three tests, scrubber (range 0.0082 - 0.154)	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	Nickel	7440020	0.0032 lb/ton dry sludge	Average of 10 tests, scrubber	101
Sewage sludge incineration	4953	Multiple hearth incinerator	50100504	Nickel	7440020	0.003 lb/ton of solid waste incinerated	Controlled by wet scrubber, calculated based on source tests	110
Sewage sludge incineration	4953	Multiple hearth incinerator	50100504	Nickel	7440020	0.15 lb/ton of solid waste incinerated	Uncontrolled, calculated based on source tests	110
Sewage sludge incineration	4953	Fluidized-bed furnace	501	Nickel	7440020	0.011 lbs/ton dry sludge	Uncontrolled emissions, single test	203
Sewage sludge incineration	4953	Multiple hearth furnace	501	Nickel	7440020	0.117 lbs/ton dry sludge	Uncontrolled emissions, range of 5 tests was 0.002 - 0.33 lbs/ton	203
Sewage sludge incineration	4953	Multiple hearth furnace	501	Nickel	7440020	0.004 lbs/ton dry sludge	Controlled by wet scrubber, range of 4 tests was 0.0002 - 0.0082 lbs/ton	203
Sewage sludge incineration	4953	Fluidized-bed furnace	50100504	2-Nitrophenol	88755	<0.000132 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	2-Nitrophenol	88755	0.007442 lb/ton dry sludge	One test, scrubber	101

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Sewage sludge incineration	4953	Fluidized-bed furnace	50100506	4-Nitrophenol	100027	<7.12 x 10E-4 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100506	4-Nitrophenol	100027	<0.000428 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Fluidized-bed furnace	50100506	Pentachlorophenol (PCP)	87865	<0.0003 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100506	Pentachlorophenol (PCP)	87865	<0.00018 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Fluidized-bed furnace	50100506	Phenol	108952	<3.8 x 10E-5 lb/ton sludge	One test, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100506	Phenol	108952	0.0491 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Fluidized-bed furnace	50100506	Polychlorinated biphenyls (PCBs)	1336363	<0.00126-<0.001382 lb/ton dry sludge	One test, scrubber, range over seven different PCB	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100506	Polychlorinated biphenyls (PCBs)	1336 :3	<(6.8 - 8.16) x 10E-4 lb/ton dry sludge	One test, scrubber, range over seven different PCB	101
Sewage sludge incineration	4953	Fluidized-bed furnace	50100506	Selenium	7782492	8 x 10E-4 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Fluidized-bed incinerator	50200506	Selenium	7782492	4 x 10E-5 lb/ton sludge	Calculated with 3.1 x 10E-4 lb/day, 1323 lb sludge/hr, 10 hr/day	20
Sewage sludge incineration	4953	Multiple hearth furnace	50100506	Selenium	7782492	0.0032 lb/ton dry sludge	Average of four tests, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100506	2,3,7,8-Tetrachlorodibenzofuran		2.464 x 10E-7 lb/ton dry sludge	Average of four tests, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100506	Tetrachlorodibenzofurans, total		9.442 x 10E-7 lb/ton dry sludge	Average of five tests, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100506	2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	1.8 x 10E-9 lb/ton dry sludge	Average of four tests, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100506	Tetrachlorodibenzo-p-dioxine, total		1.554 x 10E-7 lb/ton dry sludge	Average of five tests, scrubber	101
Sewage sludge incineration	4953	Fluidized-bed furnace	50100506	Tetrachloroethylene	127184	1 x 10E-4 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100506	Tetrachloroethylene	127184	0.0156 lb/ton dry sludge	One test, scrubber	101

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Sewage sludge incineration	4953	Fluidized-bed furnace	50100506	Toluene	108883	1.4 x 10E-4 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	Toluene	108883	0.0172 lb/ton dry sludge	Average of five tests, scrubber	101
Sewage sludge incineration	4953	Fluidized-bed furnace	50100506	1,2,4-Trichlorobenzene	120821	<5.4 x 10E-5 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	1,2,4-Trichlorobenzene	120821	<0.00218 lb/ton dry sludge	Average of two tests, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	Trichlorodibenzofurans, total		1.454 x 10E-6 lb/ton dry sludge	Average of two tests, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	Trichlorodibenzo-p-dioxin, total		3.134 x 10E-7 lb/ton dry sludge	Average of two tests, scrubber	101
Sewage sludge incineration	4953	Fluidized bed furnace	50100506	1,1,1-Trichloroethane	71556	8 x 10E-5 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	1,1,1-Trichloroethane	71556	0.0026 lb/ton dry sludge	Average of six tests, scrubber	101
Sewage sludge incineration	4953	Fluidized-bed furnace	50100506	Trichloroethylene	790.6	2 x 10E-5 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	Trichloroethylene	79016	0.0038 lb/ton dry sludge	Average of six tests, scrubber	101
Sewage sludge incineration	4953	Fluidized-bed furnace	50100506	2,4,6-Trichlorophenol	88062	<1.14 x 10E-4 lb/ton sludge	One test, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	2,4,6-Trichlorophenol	88062	<7 x 10E-5 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Fluidized-bed furnace	50100506	Vinyl chloride	75014	<2 x 10E-5 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100504	Vinyl chloride	75014	0.0082 lb/ton dry sludge	Average of four tests, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100506	Vinylidene chloride	75354	5 x 10E-4 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Multiple hearth furnace	50100506	Xylenes (mixed isomers)	1330207	0.00808 lb/ton dry sludge	One test, scrubber	101
Sewage sludge incineration	4953	Fluidized-bed furnace	50100506	Zinc	7440666	0.00184 lb/ton dry sludge	One test, scrubber	101

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Sewage sludge incineration	4953	Multiple hearth furnace	50100506	Zinc	7440666	0.0508 lb/ton dry sludge	Average of 11 tests, scrubber	101
Silicomanganese production by electric arc furnace process	3313	Casting	303	Manganese	7439965	0.24 lb/ton of Mn product	Control status unspecified, calculated based on engineering judgement	107
Silicomanganese production by electric arc furnace process	3313	Crushing/grinding/sizing	303	Manganese	7439965	0.13 lb/ton of Mn product	Control status unspecified, calculated based on engineering judgement	107
Silicomanganese production by electric arc furnace process	3313	Ladle treatment	303	Manganese	7439965	6.0 lb/ton of Mn product	Control status unspecified, calculated based on engineering judgement	107
Silicomanganese production by electric arc furnace process	3313	Open submerged-arc electric furnace	30300405	Manganese	7439965	0.11 lb/MWh consumed by furn. operation	Controlled by scrubbers, calculated from source tests of total particulate emissions	107
Silicomanganese production by electric arc furnace process	3313	Sealed submerged-arc electric furnace	303	Manganese	7439965	0.002 lb/MWh consumed by furn. operation	Controlled by scrubbers, calculated from source tests of total particulate emissions	107
Silicomanganese production by electric arc furnace process	3313	Semi-sealed submerged-arc electric furnace	30300702	Manganese	7439965	0.032 lb/ton of product	Controlled by scrubbers, calculated from source tests of total particulate emissions	107
Silicomanganese production by electric arc furnace process	3313	Semi-sealed submerged-arc electric furnace	30300702	Manganese	7439965	0.009 lb/MWh consumed by furn. operation	Controlled by scrubbers, calculated from source tests of total particulate emissions	107
Solder manufacture	3356	Entire process	304005	Lead	7439921	0.1 -0.6 lb/ton lead throughput	Based on one source test and engineering estimates from three other facilities.	206
Solid waste incineration, commercial	4953	Multiple chamber with auxilliary gas burner	50100101	Benzo(a)pyrene	50328	1.146 x 10E-3 lb/ton waste burned	Uncontrolled, represents primarily particulate POM	114
Solid waste incineration, commercial	4953	Single chamber incinerator	50100102	Benzo(a)pyrene	50328	2.34 x 10E-4 lb/ton waste burned	Uncontrolled, represents particulate POM	114
Solid waste incineration, commercial	4953	Multiple chamber with auxilliary gas burner	50100101	Polycyclic organic matter		0.044 lb/ton waste burned	Uncontrolled, represents particulate POM	114
Solid waste incineration, commercial	4953	Single chamber incinerator	50100102	Polycyclic organic matter		0.00417 lb/ton waste burned	Uncontrolled, represents particulate POM	114
Solvent application		Thinning solvent, toluene	40200922	Toluene	108883	2000 lb/ton used	Assume all toluene is eventually released to atmosphere	13
Solvent application		General emissions	401	1,1,1-Trichloroethane	71556	2000 lb/ton used	Assume all is eventually released to atmosphere	13
Solvent application		Thinning solvent, xylene	40200924	Xylenes (mixed isomers)	1330207	2000 lb/ton xylene used	Engineering estimate, assume all xylene used is eventually released to the atmosphere	13

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Solvent application	28	General emissions	401	Nitrobenzene	98953	2000 lb/ton used	Assume all is eventually lost to atmosphere	13
Solvent recycling facility	4953	Evaporation pond	4T0002	Toluene	108883	1.38 lb/hectare-hr	Based on two different sampling methods at the same site	12
Steel foundries	332	Electric arc furnace	30400701	Manganese	7439965	0.52 lb/ton of iron	Uncontrolled, calculated based on engineering judgement	107
Steel foundries	332	Electric arc furnace	30400701	Manganese	7439965	0.026 lb/ton of iron	Controlled by ESP, calculated based on engineering judgement	107
Steel foundries	332	Electric arc furnace	30400701	Manganese	7439965	0.013 lb/ton of iron	Controlled by venturi scrubber, calculated based on engineering judgement	107
Steel foundries	332	Electric arc furnace	30400701	Manganese	7439965	0.0008 lb/ton of iron	Controlled by fabric filter, calculated based on engineering judgement	107
Steel foundries	332	Induction furnace	30400705	Manganese	7439965	0.004 lb/ton of iron	Uncontrolled, calculated based on engineering judgement	107
Steel production	331	Open hearth furnace	303009	Cadmium	7440439	0.00028 lb/ton produced	Uncontrolled, calculated from data presented in the reference	98
Steel production	331	Open hearth furnace	30300[illegible]	Cadmium	7440439	4.4 x 10E-6 lb/ton produced	Controlled with ESP, calculated from data presented in the reference	98
Steel production	3312	AOD vessel - melt and refine cycle	303009	Chlorine	7782505	0.044 lbs/ton specialty steel	Uncontrolled emissions	198
Steel production	3312	Electric arc furnace - melting/refining	30300908	Chlorine	7782505	0.18 - 0.48 lbs/ton carbon steel	Uncontrolled emissions	198
Steel production	3312	Electric arc furnace - charge and tap cycle	30300908	Chlorine	7782505	0.019 - 0.024 lbs/ton carbon steel	Uncontrolled emissions	198
Steel production	3312	Argon-oxygen decarburization vessel; stainless and specialty alloys	303009	Chromium	7440473	1.04 lb/ton steel produced	Average of 0.43-0.62, as total chromium, after capture, before control	161
Steel production	3312	Electric arc furnace; carbon and alloy steel	30300908	Chromium	7440473	0.06 lb/ton steel produced	Average of 0.03-0.09, as total chromium, after capture, before control	161
Steel production	3312	Electric arc furnace; mixed products	30300904	Chromium	7440473	0.68 lb/ton steel produced	Average of 0.34-1.0, total chromium, after capture, before control	161
Steel production	3312	Electric arc furnace; stainless and specialty	30300904	Chromium	7440473	3.2 lb/ton steel produced	Average of 1.6-4.8, total chromium, after capture, before control	161
Steel production	3312	Electric arc furnace - melting/refining	30300908	Chromium (VI) oxide (1,3)	1333820	0 - 5.6 lbs/ton specialty steel	Uncontrolled emissions	198
Steel production	3312	AOD vessel - melt and refine cycle	303009	Chromium (VI) oxide (1,3)	1333820	1.82 lbs/ton specialty steel	Uncontrolled emissions	198

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Steel production	3312	Electric arc furnace - charge and tap cycle	30300908	Chromium (VI) oxide (1:3)	1333820	0 - 0.28 lbs/ton specialty steel	Uncontrolled emissions	198
Steel production	3312	AOD vessel - melt and refine cycle	303009	Copper oxide	1317380	0.064 lbs/ton specialty steel	Uncontrolled emissions	198
Steel production	3312	Electric arc furnace - charge and tap cycle	30300908	Copper oxide	1317380	0.0016 - 0.002 lbs/ton carbon steel	Uncontrolled emissions	198
Steel production	3312	Electric arc furnace - melting/refining	30300908	Copper oxide	1317380	0.015 - 0.04 lbs/ton carbon steel	Uncontrolled emissions	198
Steel production	3312	Electric arc furnace/AOD vessel streams combined	303009	Fluoride	16984488	0.74 lbs/ton steel	Uncontrolled emissions	198
Steel production	3312	Argon oxygen decarburization vessel (stainless steel)	303009	Fluoride	16984488	0.27 lbs/ton steel	Uncontrolled emissions	198
Steel production	3312	Electric arc furnace	30300908	Fluoride	16984488	0.004 - 0.7 lbs/ton steel	Uncontrolled emissions	198
Steel production	3312	Steel pickling, absorber towers	30300910	Hydrogen chloride	7647010	0.00055-0.0011 lbs/ton steel pickled	Calculated from information in reference	133
Steel production	3312	Argon oxygen decarburization vessel (stainless steel)	303009	Lead	7439921	0.039 lbs/ton steel	Uncontrolled emissions	198
Steel production	3312	Electric arc furnace/AOD vessel streams combined	303009	Lead	7439921	0.13 lbs/ton steel	Uncontrolled emissions	198
Steel production	3312	Electric arc furnace - charge and tap cycle	30300908	Lead oxide	1317368	0 - 0.08 lbs/ton carbon steel	Uncontrolled emissions	198
Steel production	3312	AOD vessel - melt and refine cycle	303009	Lead oxide	1317368	0.192 lbs/ton specialty steel	Uncontrolled emissions	198
Steel production	3312	Electric arc furnace - melting/refining	30300908	Lead oxide	1317368	0 - 1.6 lbs/ton carbon steel	Uncontrolled emissions	198
Steel production	3312	Basic oxygen furnace operations, BOF monitor	303009	Manganese	7439965	0.005 lb/ton of steel	All sources, uncontrolled, calculated based on engineering judgement	107
Steel production	3312	Basic oxygen furnace operations, 0-BOP process melting/refining	303009	Manganese	7439965	0.00056 lb/ton of steel	Controlled by scrubber, calculated based on engineering judgement	107
Steel production	3312	Basic oxygen furnace operations, charging	30300916	Manganese	7439965	0.006 lb/ton of steel	At source, uncontrolled, calculated based on engineering judgement	107
Steel production	3312	Basic oxygen furnace operations, hot metal transfer	30300915	Manganese	7439965	0.0004 lb/ton of steel	At source, uncontrolled, calculated based on engineering judgement	107

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INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Steel production	3312	Basic oxygen furnace operations, tapping	30300917	Manganese	7439965	0.0092 lb/ton of steel	At source, uncontrolled, calculated based on engineering judgement	107
Steel production	3312	Electric arc furnace operations, charging/tapping/slagging	303009	Manganese	7439965	0.049 lb/ton of product	Uncontrolled at roof monitor, calculated based on engineering judgement	107
Steel production	3312	Electric arc furnace operations, melt/ref/charge/tap/slag alloy steel	303009	Manganese	7439965	0.456 lb/ton of product	Uncontrolled, calculated based on engineering judgement	107
Steel production	3312	Electric arc furnace operations, melt/ref/charge/tap/slag alloy steel	303009	Manganese	7439965	0.0174 lb/ton of product	Controlled by total building evacuation to fabric filter, calculated based on engineering judgement	107
Steel production	3312	Electric arc furnace operations, melt/ref/charge/tap/slag carbon steel	303009	Manganese	7439965	1.78 lb/ton of product	Uncontrolled, calculated based on engineering judgement	107
Steel production	3312	Electric arc furnace operations, melt/ref/charge/tap/slag carbon steel	303009	Manganese	7439965	0.0015 lb/ton of product	Controlled by DEC plus charging hood to fabric filter, calculated based on engineering judgement	107
Steel production	3312	Electric arc furnace operations, melting/refining carbon steel	30300908	Manganese	7439965	1.33 lb/ton of product	Uncontrolled, calculated based on engineering judgement	107
Steel production	3312	Top-blown basic oxygen furnace, melting/refining	30300913	Manganese	7439965	0.285 lb/ton of steel	Uncontrolled, calculated based on engineering judgement	107
Steel production	3312	Top-blown basic oxygen furnace, melting/refining	30300913	Manganese	7439965	0.013 lb/ton of steel	Controlled by open hood vented to ESP, calculated based on engineering judgement	107
Steel production	3312	Top-blown basic oxygen furnace, melting/refining	30300913	Manganese	7439965	0.009 lb/ton of steel	Controlled by open hood vented to scrubber, calculated based on engineering judgement	107
Steel production	3312	Top-blown basic oxygen furnace, melting/refining	30300914	Manganese	7439965	0.00048 lb/ton of steel	Controlled by closed hood vented to scrubber, calculated based on engineering judgement	107
Steel production	3312	AOD vessel - melt and refine cycle	303009	Manganese oxide	1317346	2.5 lbs/ton specialty steel	Uncontrolled emissions	198
Steel production	3312	Electric arc furnace - charge and tap cycle	30300908	Manganese oxide	1317346	0.0096 - 0.24 lbs/ton carbon steel	Uncontrolled emissions	198
Steel production	3312	Electric arc furnace - melting/refining	30300908	Manganese oxide	1317346	0.09 - 4.8 lbs/ton carbon steel	Uncontrolled emissions	198

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Steel production	3312	Electric arc furnace - melting/refining	30300908	Manganese oxide	1317346	0.09 - 0.24 lbs/ton specialty steel	Uncontrolled emissions	198
Steel production	3312	Electric arc furnace - charge and tap cycle	30300908	Manganese oxide	1317346	0.0096 - 0.012 lbs/ton carbon steel	Uncontrolled emissions	198
Steel production	3312	Argon oxygen decarburization vessel (stainless steel)	30300998	Nickel	7440020	0.32 lb/ton of steel produced	Uncontrolled, calculated based on source tests	110
Steel production	3312	Argon oxygen decarburization vessel (stainless steel)	30300998	Nickel	7440020	0.044 lb/ton of steel produced	Controlled with fabric filter, calculated based on source tests	110
Steel production	3312	Basic oxygen process, fugitives	303009	Nickel	7440020	0.0001 lb/ton of steel produced	Uncontrolled, calculated based on source tests	110
Steel production	3312	Basic oxygen process, furnace	30300913	Nickel	7440020	0.000018 lb/ton of steel produced	Controlled by scrubber, calculated based on source tests	110
Steel production	3312	Electric arc furnace (alloy steel)	30300904	Nickel	7440020	0.025 lb/ton of steel produced	Uncontrolled, calculated based on source tests	110
Steel production	3312	Electric arc furnace (alloy steel)	30300904	Nickel	7440020	0.000039-0.00025 lb/ton steel produced	Controlled with fabric filter, calculated based on source tests	110
Steel production	3312	Electric arc furnace (carbon steel)	30300908	Nickel	7440020	0.0083 lb/ton of steel produced	Uncontrolled, calculated based on source tests	110
Steel production	3312	Electric arc furnace (carbon steel)	30300908	Nickel	7440020	0.000013-0.000084 lb/ton steel produced	Controlled by fabric filter, calculated based on source tests	110
Steel production	3312	Electric arc furnace (stainless steel)	30300998	Nickel	7440020	0.3 lb/ton of steel produced	Uncontrolled, calculated based on source tests	110
Steel production	3312	Electric arc furnace (stainless steel)	30300998	Nickel	7440020	0.003 lb/ton of steel produced	Controlled with fabric filter, calculated based on source tests	110
Steel production	3312	Electric arc furnace fugitive emissions (alloy steel)	303009	Nickel	7440020	0.0014 lb/ton of steel produced	Uncontrolled, calculated based on source tests	110
Steel production	3312	Electric arc furnace fugitive emissions (alloy steel)	303009	Nickel	7440020	0.00032 lb/ton of steel produced	Controlled with hoods and fabric filter, calculated based on source tests	110
Steel production	3312	Electric arc furnace fugitive emissions (carbon steel)	303009	Nickel	7440020	0.00054 lb/ton of steel produced	Uncontrolled, calculated based on source tests	110
Steel production	3312	Electric arc furnace fugitive emissions (carbon steel)	303009	Nickel	7440020	0.00011 lb/ton of steel produced	Controlled with hoods and fabric filter, calculated based on source tests	110

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Steel production	3312	Electric arc furnace fugitive emissions (stainless steel)	30300998	Nickel	7440020	0.036 lb/ton of steel produced	Uncontrolled, calculated based on source tests	110
Steel production	3312	Electric arc furnace fugitive emissions (stainless steel)	30300998	Nickel	7440020	0.0072 lb/ton of steel produced	Controlled with hoods and fabric filter, calculated based on source tests	110
Steel production	3312	Open hearth fugitive emissions	303009	Nickel	7440020	0.00005 lb/ton of steel produced	Uncontrolled, calculated based on source tests	110
Steel production	3312	Open hearth furnace	30300901	Nickel	7440020	0.00018 lb/ton of steel produced	Controlled by ESP, calculated based on source tests	110
Steel production	3312	Argon oxygen decarburization vessel (stainless steel)	303009	Nickel	7440020	0.38 lbs/ton steel	Uncontrolled emissions	198
Steel production	3312	Electric arc furnace/AOD vessel streams combined	303009	Nickel	7440020	0.25 lbs/ton steel	Uncontrolled emissions	198
Steel production	3312	Electric arc furnace - melting/refining	30300908	Nickel(II) oxide (1:1)	1313991	0 - 0.12 lbs/ton carbon steel	Uncontrolled emissions	198
Steel production	3312	Electric arc furnace - charge and tap cycle	30300908	Nickel(II) oxide (1:1)	1313991	0 - 0.006 lbs/ton carbon steel	Uncontrolled emissions	198
Steel production	3312	AOD vessel - melt and refine cycle	303009	Nickel(II) oxide (1:1)	1313991	0.496 lbs/ton specialty steel	Uncontrolled emissions	198
Steel production	3312	AOD vessel - melt and refine cycle	303009	Titanium oxide	13463677	0.128 lbs/ton specialty steel	Uncontrolled emissions	198
Steel production	3312	Basic oxygen furnace	303009	Vanadium	7440622	0.0003 lb/ton steel produced	97% emission control, based on particulate emission factor and V content	56
Steel production	3312	Electric arc furnace	30300904	Vanadium	7440622	0.008 lb/ton of steel produced	78% emission control, based on particulate emission factor and V content	56
Steel production	3312	Open hearth furnace	30300901	Vanadium	7440622	0.0051 lb/ton steel produced	40% control efficiency, based on particulate emission factor and V content	56
Steel production	3312	AOD vessel - melt and refine cycle	303009	Vanadium oxide	1314621	0.016 lbs/ton specialty steel	Uncontrolled emissions	198
Steel production	3312	Basic oxygen furnace	303009	Zinc	7440666	0.3 lb/ton steel produced	Based on controlled particulate emis. factor of 14 lb/ton steel produced & zinc content of 2.24%	66
Steel production	3312	Electric arc furnace	303009	Zinc	7440666	0.7 lb/ton steel produced	Based on controlled particulate emis. factor of 2.5 lb/ton steel prod. & part. zinc content of 29.6%	66

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INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Steel production	3312	Open hearth furnace	303009	Zinc	7440666	1.3 lb/ton steel produced	Based on controlled particulate emis. factor of 10.2 lb/ton steel produced, w/ zinc content of 12.8%	66
Steel production	3312	Zinc galvanizing kettles	30300936	Zinc	7440666	3.6 lb/ton zinc processed	Based on emissions data obtained from galvanizing plants in the late 1960s	66
Steel production	3312	Electric arc furnace - melting/refining	30300908	Zinc oxide	1314132	0 - 6.52 lbs/ton carbon steel	Uncontrolled emissions	198
Steel production	3312	Electric arc furnace - charge and tap cycle	30300908	Zinc oxide	1314132	0 - 0.326 lbs/ton carbon steel	Uncontrolled emissions	198
Steel production	3312	AOD vessel - melt and refine cycle	303009	Zinc oxide	1314132	0.544 lbs/ton specialty steel	Uncontrolled emissions	198
Styrene-butadiene copolymer production	2821	Secondary source-other liquid waste	301018	1,3-Butadiene	106990	0.02 lb/ton	Controlled (unspecified), average emission factor based on 5 facilities	166
Styrene-butadiene copolymer production	2821	Secondary source-other liquid waste	301018	1,3-Butadiene	106990	0.02 lb/ton	Controlled (unspecified), average emission factor based on 11 facilities	166
Styrene-butadiene copolymer production	2821	Secondary source-other liquid waste	301018	1,3-Butadiene	106990	0.300 lb/ton	Controlled (unspecified), average emission factor based on 18 facilities	166
Styrene-butadiene copolymer production	2821	Equipment leak	301018	1,3-Butadiene	106990	7.275 tons/yr	Uncontrolled, average emission factor based on 19 facilities	166
Styrene-butadiene copolymer production	2821	Process vents	301018	1,3-Butadiene	106990	7.10 lb/ton	Controlled (unspecified), average emission factor based on 18 facilities	166
Styrene-butadiene copolymer production	2821	Process vents	301018	1,3-Butadiene	106990	14.2 lb/ton	Uncontrolled, average emission factor based on 18 facilities	166
Styrene-butadiene copolymers production - emulsion crumb	2821	Coagulation/blend tanks	301018	Styrene	100425	0.84 lb/ton polymer produced	Control status unclear	96
Styrene-butadiene copolymers production - emulsion crumb	2821	Dryer	301018	Styrene	100425	9.0 lb/ton polymer produced	Control status unclear	96
Styrene-butadiene copolymers production - emulsion latex	2821	Blend tanks	301018	Styrene	100425	0.2 lb/ton polymer	Control status unclear	96
Styrene-butadiene copolymers production - emulsion latex	2821	Monomer removal	301018	Styrene	100425	0.30 lb/ton polymer	Control status unclear	96
Styrene-butadiene rubber produc. by emulsion polymerization	2822	Butadiene absorption	301026	1,3-Butadiene	106990	0.2 lb/ton SBR produced	Uncontrolled, based on industry estimates	81

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Styrene-butadiene rubber produc. by emulsion polymerization	2822	Dryer	301026	Styrene	100425	1.2 lb/ton SBR produced	Uncontrolled, based on industry estimates	81
Styrene-butadiene rubber produc. by emulsion polymerization	2822	Styrene storage (breathing)	40703613	Styrene	100425	0.04 lb/ton SBR produced	Uncontrolled, based on industry estimates	81
Styrene-butadiene rubber produc. by emulsion polymerization	2822	Styrene storage (fugitive)	407036	Styrene	100425	0.8 lb/ton SBR produced	Uncontrolled, based on industry estimates	81
Styrene-butadiene rubber produc. by solution polymerization	2822	Styrene storage (breathing)	40703613	Styrene	100425	0.04 lb/ton SBR produced	Uncontrolled, based on engineering estimates	81
Styrene-butadiene rubber production	2822	Equipment leak	301026	1,3-Butadiene	106990	1.4 lb/ton SBR produced	Calculated from national emissions and capacity, uncontrolled	83
Styrene-butadiene rubber production	2822	Process vents	301026	1,3-Butadiene	106990	1.92 lb/ton SBR produced	Calculated from national emis. & national capacity, represents ave. of control. & uncontrol. sources	83
Styrene-butadiene rubber production	2822	Wastewater emissions	301026	1,3-Butadiene	106990	0.08 lb/ton SBR produced	Calculated from national emissions and capacity, uncontrolled	83
Sulfuric acid production - contact process	2819	Entire process - bright virgin sulfur	30102201	Sulfuric acid	7664939	1.7 lb/ton acid	Uncontrolled	97
Sulfuric acid production - contact process	2819	Entire process - dark virgin sulfur	30102201	Sulfuric acid	7664939	0.32-6.3 lb/ton acid	Uncontrolled, emission proportional to % oleum in product	97
Sulfuric acid production - contact process	2819	Entire process - raw material is recovered sulfur	30102201	Sulfuric acid	7664939	0.35-0.8 lb/ton acid	Uncontrolled, emission proportional to % oleum in product	97
Sulfuric acid production - contact process	2819	Entire process - spent acid	30102201	Sulfuric acid	7664939	2.2-2.4 lb/ton acid	Uncontrolled, emission proportional to % oleum in product	97
Sulfuric acid production - contact process	2819	Entire process - sulfide ore	30102201	Sulfuric acid	7664939	1.2-7.4 lb/ton acid	Uncontrolled, emission proportional to % oleum in product	97
Sulfuric acid production - contact process	2819	Entire process	30102201	Sulfuric acid	7664939	0.016 - 0.141 lbs/ton acid	Average of 32 plt was 0.081 lbs/ton, controlled by acid mist eliminator	200
Sulfuric acid production - contact process	2819	Entire process	30102201	Sulfuric acid	7664939	0.4 - 4 lbs/ton acid	Uncontrolled emissions, no oleum produced	200
Sulfuric acid production - contact process	2819	Entire process	30102201	Sulfuric acid	7664939	1 - 10 lbs/ton acid	Uncontrolled emissions, plant produces oleum	201
Sulfuric acid production - contact process	2819		30102201	Sulfuric acid	7664939	0.004 - 0.15 lbs/ton acid	Average of 44 plts was 0.07 lbs/ton, controlled by acid mist eliminator	201

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Sulfuric acid production - single absorption process	2819	Entire process-ammonium sulfate waste and sulfur	30102201	Sulfuric acid	7664939	0.06 lb/ton acid	Controlled with a vertical tube mist eliminator, measured using EPA method 8	178
Sulfuric acid production - single absorption process	2819	Entire process - spent acid	30102201	Sulfuric acid	7664939	0.29 lb/ton acid	Controlled with a vertical tube mist eliminator, measured using EPA method 8, average of 2 values, range is 0.26 - 0.31 lb/ton	178
Sulfuric acid production - single absorption process	2819	Entire process-sulfur	30102201	Sulfuric acid	7664939	0.18 lb/ton acid	Controlled with a scrubber and a horizontal dual pad mist eliminator, measured using EPA M 8, avg of 2 values, range is 0.16 - 0.20 lb/ton	178
Sulfuric acid production - single absorption process	2819	Entire process-sulfur	30102201	Sulfuric acid	7664939	0.06 lb/ton acid	Controlled with a vertical tube mist eliminator, measured using EPA Method 8	178
Superphosphate (granular triple) production	2874	Curing building	30102907	Fluoride	16984488	0.04 lb/ton P2O5	Wet scrubber (97%), based on test data	97
Superphosphate (granular triple) production	2874	Reactor, granulator, dryer, cooler and screens	30102906	Fluoride	16984488	0.24 lb/ton P2O5	Wet scrubber (97%), based on test data	97
Superphosphate (granular triple) production	2874	Slaplot process	301029	Fluoride	16984488	0.187 lbs/ton of P2O5 produced	Controls not specified	190
Superphosphate (granular triple) production	2874	Open bay storage building	30102908	Fluoride	16984488	0.00005-0.00042 lbs/ton of P2O5 produced	Controlled by spray-crossflow packed scrubber, average of 7 tests was 0.0002 lbs/ton P2O5	195
Superphosphate (granular triple) production	2874	Reactor, granulator, dryer, cooler and screens	30102906	Fluoride	16984488	0.174-0.278 lbs/ton of P2O5 produced	Ctrl by 2 venturi, 1 cyclonic, & 1 spray-crossflow packed scrubber, avg of 3 tests 0.211 lb/ton P2O5	195
Superphosphate (granular triple) production	2874	Reactor, granulator, dryer, cooler and screens	30102906	Fluoride	16984488	0.044-0.24 lbs/ton of P2O5 produced	Ctrl by venturi scrubbers & spray-crossflow packed scrubbers, avg of 10 tests 0.121 lb/ton P2O5	195
Superphosphate (granular triple) production	2874	Reactor/dryer	30102906	Hydrogen fluoride	7664393	0.24 lbs/ton P2O5	Unknown control	181
Superphosphate (granular triple) production	2874	Reactor/dryer	30102906	Hydrogen fluoride	7664393	21 lbs/ton P2O5	Uncontrolled	181
Superphosphate (normal) production	2874	Curing building	30102804	Fluoride	16984488	3.8 lb/ton P2O5	Uncontrolled	97
Superphosphate (normal) production	2874	Mixer and den	30102805	Fluoride	16984488	0.2 lb/ton P2O5	Wet scrubber (97%)	97
Superphosphate (run-of-the-pile triple) production	2874	Cone mixer, den and curing building	30102905	Fluoride	16984488	0.2 lb/ton P2O5	Wet scrubber (97%), based on test data	97
Superphosphate (run-of-the-pile triple) production	2874	Conventional continuous den run-tap mfg. train	30102905	Fluoride	16984488	0.022-0.230 lbs/ton of P2O5 produced	Controlled by 2 cyclonic scrubbers in series, average of 4 tests was 0.119 lbs/ton P2O5	195

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Superphosphate (run-of-the-pile triple) production	2874	Conventional continuous den /ge-tee mfg. train	30102905	Fluoride	16984488	0.035-0.345 lbs/ton of P2O5 produced	Controlled by a venturi scrubber, packed-bed cyclonic scrubber, avg of 7 tests 0.195 lbs/ton P2O5	195
Superphosphoric acid production	2874	Vacuum evaporation process	301016	Fluoride	16984488	0.0005 lb/ton P2O5 input	Controlled with a packed scrubber	174
Symmetrical tetrachloropyridine production	2899	All sources		Carbon tetrachloride	56235	150,000 lb/yr	Two plants in U.S., some control	134
Synthetic fibers production - viscose rayon	2824	General emissions	30102501	Carbon disulfide	75150	55 lb/ton fibers	Uncontrolled, low quality factor	97
Synthetic fibers production - viscose rayon	2824	General emissions	30102501	Hydrogen sulfide	7783064	6 lb/ton fibers	Uncontrolled, low quality factor	97
Synthetic rubber production	30	Equipment leak		1,3-Butadiene	106990	59.30 tons/yr	Controlled (unspecified) based on one plant's	144
Synthetic rubber production	30	Equipment leak		1,3-Butadiene	106990	67.7 tons/yr	Uncontrolled based on one plant's data	144
Tank truck cleaning	7699	Entire process	490004	Acetone	67641	0.486 lb/truck cleaned	Emission measurement	97
Tank truck cleaning	7699	Entire process	49004	1-Methoxy-2-propanol	107982	0.002 lb/truck cleaned	Emission measurement	97
Tank truck cleaning	7699	Entire process	49004	Methyl methacrylate	80626	0.071 lb/truck cleaned	Emission measurement	97
Tank truck cleaning	7699	Entire process	49004	Phenol	108952	0.012 lb/truck cleaned	Emission measurement	97
Tank truck cleaning	7699	Entire process	49004	Tetrachloroethylene	127184	0.474 lb/truck cleaned	Emission measurement	97
Tank truck transport	421	Tank truck loaded with product - extreme losses	406001	1,2-Dibromoethane	106934	4.8 x 10E-7 lb/1000 gal transported	Calculated from gasoline vapor estimates	50
Tank truck transport	421	Tank truck loaded with product - typical losses	406001	1,2-Dibromoethane	106934	4.8 x 10E-8 lb/1000 gal transported	Calculated from gasoline vapor estimates	50
Tank truck transport	421	Tank truck unloaded - extreme losses	406001	1,2-Dibromoethane	106934	2.11 x 10E-6 lb/1000 gal transported	Calculated from gasoline vapor estimates	50
Tank truck transport	421	Tank truck unloaded - typical losses	406001	1,2-Dibromoethane	106934	6.24 x 10E-7 lb/1000 gal transported	Calculated from gasoline vapor estimates	50
Tank truck transport	421	Tank truck loaded with product - extreme losses	406001	1,2-Dichloroethane	107062	4.91 x 10E-6 lb/1000 gal transported	Calculated from gasoline vapors estimates	50
Tank truck transport	421	Tank truck loaded with product - typical losses	406001	1,2-Dichloroethane	107062	4.91 x 10E-7 lb/1000 gal transported	Calculated from gasoline vapors estimates	50

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Tank truck transport	421	Tank truck unloaded - extreme losses	406001	1,2-Dichloroethane	107062	2.16 x 10E-8 lb/1000 gal transported	Calculated from gasoline vapors estimates	50
Tank truck transport	421	Tank truck unloaded - typical losses	406001	1,2-Dichloroethane	107062	6.38 x 10E-6 lb/1000 gal transported	Calculated from gasoline vapors estimates	50
Tank truck transport	421	Tank truck loaded with product - extreme losses	406001	Gasoline	8006619	0.00417 lb/1000 gal transported	Average of range determined from engineering estimate, RVP = 10 psia	97
Tank truck transport	421	Tank truck loaded with product - typical losses	406001	Gasoline	8006619	0.00417 lb/1000 gal transported	Average of range determined from engineering estimate, RVP = 10 psia	97
Tank truck transport	421	Tank truck unloaded - extreme losses	406001	Gasoline	8006619	0.225 lb/1000 gal transported	Average of range determined from engineering estimate, RVP = 10 psia	97
Tank truck transport	421	Tank truck unloaded - typical losses	406001	Gasoline	8006619	0.0542 lb/1000 gal transported	Average of range determined from engineering estimate, RVP = 10 psia	97
Terephthalic acid (crude) prod. by air oxidation process	2869	Reactor vent	30103102	1,4-Xylene	106423	12 lb/ton crude terephthalic acid prod.	Uncontrolled, based on hypothetical plant operating 8760 h/yr and having 5.07 x 10E8 lb/yr capacity	62
Terephthalic acid (crude) prod. by air oxidation process	2869	Reactor vent	30103102	1,4-Xylene	106423	0.36 lb/ton crude terephthalic acid prod	Contr = carb. adsorb. (97% emis. reduction), hypothetical plant oper. 8760 h/yr & 5.07 x 10E8 lb/yr	62
Terephthalic acid (crude) prod. by air oxidation process	2869	Xylene, p- storage tank vents	40703622	1,4-Xylene	106423	0.22 lb/ton crude terephthalic acid prod	Uncontrolled, filling emis. only, hypothetical plant operating 8760 h/yr with 5.07 x 10E8 lb/yr cap	62
Terephthalic acid (crude) production	2869	Reactor vent	30103102	Acetic acid	64197	1.2 lb/ton crude TPA produced	Uncontrolled	62
Terephthalic acid (crude) production	2869	Reactor vent	30103102	Methyl acetate	79209	16 lb/ton crude TPA produced	Uncontrolled	62
Terephthalic acid (crude) production	2869	Reactor vent	30103102	Xylenes (mixed isomers)	1330207	12 lb/ton crude TPA produced	Uncontrolled	62
Terephthalic acid (purified) production	2869	Atmospheric centrifuge tank	301031	Terephthalic acid	100210	0.046 lb/ton TPA	Uncontrolled, particulate	62
Terephthalic acid (purified) production	2869	Crystallizer vent	30103103	Terephthalic acid	100210	0.196 lb/ton TPA	Uncontrolled, particulate	62
Terephthalic acid (purified) production	2869	Dryer vent	30103103	Terephthalic acid	100210	0.0024 lb/ton TPA	Uncontrolled, particulate	62
Terephthalic acid (purified) production	2869	Feed slurry vent tank	301031	Terephthalic acid	100210	0.176 lb/ton TPA	Uncontrolled, particulate	62

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Terephthalic acid (purified) production	2869	Silo dust collector vent	301031	Terephthalic acid	100210	0.0034 lb/ton TPA	Uncontrolled, particulate	62
Terephthalic acid production	2869	Fugitive emissions	301031	1,4-Xylene	106423	0.14 lb/ton xylene used	Based on site visit data	13
Terephthalic acid production	2869	Process - general	301031	1,4-Xylene	106423	5.08 lb/ton xylene used	Based on site visit data	13
Terephthalic acid production	2869	Storage	407	1,4-Xylene	106423	0.22 lb/ton xylene used	Based on site visit data	13
Tetraethyl lead production	2869	Fugitive emissions	301042	Chloroethane	75003	0.119 lb/ton of tetraethyl lead prod.	Based on one facility's response to a 1975 emission inventory questionnaire	48
Tetraethyl lead production	2869	Process - general	301042	Chloroethane	75003	82 lb/ton tetraethyl lead produced	Based on Texas ACB Emission Inventory data for one source	48
Tetrahydrobenzaldehyde production	2869	Equipment leak		1,3-Butadiene	106990	4.3 tons/yr	Controlled (unspecified) based on one plant's data	166
Tetrahydrobenzaldehyde production	2869	Process vents		1,3-Butadiene	106990	1.54 lb/ton THB produced	Uncontrolled based on one plant's data	166
Tetrahydrobenzaldehyde production	2869	Process vents		1,3-Butadiene	106990	0.030 lb/ton THB produced	Controlled (unspecified) based on one plant's data	166
Tetrahydrophthalic anhydride/acid production	28	Equipment leak		1,3-Butadiene	106990	2.4 tons/yr	Controlled (unspecified), and uncontrolled, based on one plant's data	166
Tetrahydrophthalic anhydride/acid production	28	Equipment leak		1,3-Butadiene	106990	8.2 tons/yr	Controlled (unspecified), and uncontrolled, based on one plant's data	166
Toluene diisocyanate production	2865	Fugitive emissions	30118180	Phosgene	75445	0.0244 lb/ton phosgene produced	Hypothetical site, upper end of range, lower value is 0.0004 lb/ton	121
Toluene diisocyanate production	2865	Process - general	30118101	Phosgene	75445	0.012 lb/ton produced	Derived from State air emission files	13
Toluene diisocyanate production	2865	Process upsets	30118101	Phosgene	75445	0.00025 lb/ton phosgene produced		121
Toluene diisocyanate production	2865	Process vents	30118101	Phosgene	75445	0.0015 lb/ton phosgene produced	Hypothetical site, value for TDI produc., add value for phosgene to get total phosgene-TDI plant	121
Toluene diisocyanate production	2865	Sulfuric acid concentrator	30118102	Sulfuric acid	7664939	0.018 lb/ton TDI produced	Calculated from 0.18% (wt.) in emission stream and 10 lb VOC/ton TDI	153
Toluene diisocyanate production	2865	Fugitive emissions	30118180	Toluene	108883	0.38 lb/ton used	Engineering estimate	13

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INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Toluene diisocyanate production	2865	General emissions	30118101	Toluene	108883	1.84 lb/ton used	Engineering estimate	13
Toluene diisocyanate production	2865	Storage	407044	Toluene	108883	0.44 lb/ton used	Engineering estimate	13
Toluene production	2865	General emissions	30125805	Toluene	108883	0.34 lb/ton produced	Average of four values given for four different processes	13
Toluene production	2865	Storage	407036	Toluene	108883	0.93 lb/ton produced	Average of four values given for four different processes	13
Toluene production via catalytic reformate	2911	Cracking unit	306002	Toluene	108883	0.04 lb/ton produced		13
Trichloroethylene production	2869	Entire process	30112530	1,2-Dichloroethane	107062	10 lb/ton TCE produced	Controlled, aggregate estimate based on national emissions and production estimates	51
Trichloroethylene production	2869	Fugitive emissions	30112534	Trichloroethylene	79016	1.5 lb/ton produced	Engineering estimate	13
Trichloroethylene production	2869	Process - general	30112530	Trichloroethylene	79016	1.024 lb/ton produced	Derived from State air emission files	13
Trichloroethylene production	2869	Storage	407040	Trichloroethylene	79016	1.62 lb/ton produced	Derived from State air emission files	13
Trichloroethylene production - EDC chlorination	2869	Equipment openings	30112930	Tetrachloroethylene	127184	0.0016 lb/ton TCE production capacity	One plant, based on estimated annual emissions divided by production capacity, uncontrolled	208
Trichloroethylene production - EDC chlorination	2869	Process fugitive emissions	30112534	Tetrachloroethylene	127184	6.06 tons/yr	One plant, Based on the average emission factor method for estimating equipment leaks, uncontrolled	208
Trichloroethylene production - EDC chlorination	2869	Handling	30112530	Tetrachloroethylene	127184	0 lb/ton production capacity	One plant, based on annual est emissions divided by prod capacity, controlled with scrubber, company claims 100% control	208
Trichloroethylene production - EDC chlorination	2869	Storage	30112530	Tetrachloroethylene	127184	0.004 lb/ton production capacity	One plant, based on annual estimated emissions divided by production capacity, unknown control	208
Trichloroethylene production - EDC chlorination	2869	Secondary sources (wastewater, etc.)	30112530	Tetrachloroethylene	127184	1.4 x 10E-5 lb/ton TCE production capacity	One plant, based on estimated annual emissions divided by production capacity, unknown control	208
Trichloroethylene production - EDC chlorination	2869	Secondary sources (wastewater, etc.)	30112530	Trichloroethylene	79016	0.0004 lb/ton production capacity	One plant, based on estimated annual emissions divided by production capacity, uncontrolled	208

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	NCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Trichloroethylene production - EDC chlorination	2869	Equipment openings	30112530	Trichloroethylene	79016	0.008 lb/ton production capacity	One plant, based on estimated annual emissions divided by production capacity, uncontrolled	208
Trichloroethylene production - EDC chlorination	2869	Equipment openings	30112534	Trichloroethylene	79016	26.56 ton/yr	One plant, based on the average emission factor method for estimating equipment leaks, unknown control	208
Trichloroethylene production - EDC chlorination	2869	Handling	30112530	Trichloroethylene	79016	0.38 lb/ton TCE production capacity	One plant, based upon estimated annual emissions divided by production capacity, uncontrolled	208
Trichloroethylene production - EDC chlorination	2869	Storage	30112530	Trichloroethylene	79016	0.46 lb/ton TCE production capacity	One plant, based upon estimated annual emissions divided by production capacity, unknown control	208
Trichloroethylene production - EDC chlorination	2869	Process vent other than distillation	30112530	Trichloroethylene	79016	0.002 lb/ton TCE production capacity	One plant, based upon estimated annual emissions divided by production capacity, unknown control	208
Trichloroethylene production - EDC chlorination	2869	Distillation column	30112531	Trichloroethylene	79016	0.006 lb/ton TCE production capacity	One plant, based upon estimated annual emissions divided by production capacity, uncontrolled	208
Trichloroethylene production by oxyhydrochlorination process	2869	Absorption	30112530	Carbon tetrachloride	56235	26 lb/ton produced	Control unclear, based on mass balance and testing	95
Trichloroethylene production by oxyhydrochlorination process	2869	Absorption	30112530	1,2-Dichloroethane	107062	26 lb/ton produced	Control unclear, based on mass balance and testing	95
Trichloroethylene production by oxyhydrochlorination process	2869	Absorption	30112530	Trichloroethylene	79016	17 lb/ton produced	Control unclear, based on mass balance and testing	95
Trimethylolpropane production	2869	Formaldehyde storage	301250	Formaldehyde	50000	0.02 lb/ton of 37% formaldehyde used	No information was available on the basis of these estimates or the types of controls involved	104
Trimethylolpropane production	2869	Process - general	301250	Formaldehyde	50000	0.148 lb/ton of 37% formaldehyde used	No information was available on the basis of these estimates or the types of controls involved	104
Unsaturated polyester resin production	2821	Product storage	301018	Styrene	100425	0.1 lb/ton resin	Control status unclear	96
Unsaturated polyester resin production	2821	Styrene storage	407	Styrene	100425	0.04 lb/ton resin	Control status unclear	96

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Unsaturated polyester resin production	2821	Thinning/blending	301018	Styrene	100425	0.16 lb/ton resin	Control status unclear	94
Uranium mining	1094	Ore loading, dumping		Radionuclides		75 Ci Rn-222/g ore and sub-ore mined	Rough est. for avg lrg underground mine w/ ore grade = 0.1% triuranium octoxide	37
Uranium mining	1094	Ore stockpile exhalation		Radionuclides		265 Ci Rn-222/g ore and sub-ore mined	Rough est. for avg lrg underground mine w/ ore grade = 0.1% triuranium octoxide	37
Uranium mining	1094	Reloading ore from stockpile		Radionuclides		75 Ci Rn-222/g ore and sub-ore mined	Rough est. for avg lrg underground mine w/ ore grade = 0.1% triuranium octoxide	37
Uranium mining	1094	Sub-ore loading, dumping		Radionuclides		25 Ci Rn-222/g ore and sub-ore mined	Rough est. for avg lrg underground mine w/ ore grade = 0.1% triuranium octoxide	37
Uranium mining	1094	Sub-ore stockpile exhalation		Radionuclides		1690 Ci Rn-222/g ore and sub-ore mined	Rough est. for avg lrg underground mine w/ ore grade = 0.1% triuranium octoxide	37
Uranium mining	1094	Underground uranium mines	30504010	Radionuclides		0.004 - 0.19 Ci Rn-222/ton ore processed		38
Uranium mining	1094	Waste rock loading, dumping		Radionuclides		0 Ci Rn-222/g waste rock produced	Rough est. for avg lrg underground mine w/ ore grade = 0.1% triuranium octoxide	37
Uranium mining	1094	Waste rock pile exhalation		Radionuclides		140 Ci Rn-222/g waste rock mined	Rough est. for avg lrg underground mine w/ ore grade = 0.1% triuranium octoxide	37
Urea (solid) production	2873	Drum granulation	30104004	Formaldehyde	50000	0.011 lb/ton of solid urea produced	Uncontrolled, based on source tests	106
Urea (solid) production	2873	Drum granulation	30104004	Formaldehyde	[illegible]	0.0094 lb/ton of solid urea produced	Controlled by wet scrubber, based on source tests	106
Urea (solid) production	2873	Fluidized bed prilling (agricultural grade)	30104010	Formaldehyde	50000	0.019 lb/ton of solid urea produced	Uncontrolled, based on source tests	106
Urea (solid) production	2873	Fluidized bed prilling (agricultural grade)	30104010	Formaldehyde	50000	0.0008 lb/ton of solid urea produced	Controlled by wet scrubber, based on source tests	106
Urea (solid) production	2873	Fluidized bed prilling (feed grade)	30104011	Formaldehyde	50000	0.004 lb/ton of solid urea produced	Uncontrolled, based on source tests	106
Urea (solid) production	2873	Fluidized bed prilling (feed grade)	30104011	Formaldehyde	50000	0.001 lb/ton of solid urea produced	Controlled by wet scrubber, based on source tests	106
Urea production	287	Rotary drum granulator coolers	30104012	Ammonia	7664417	0.0051 lbs/ton coal charged	Sources emitting > 100 tons NH3/year	179
Urea production	287	Drum granulation	30104004	Ammonia	7664417	2.2 lbs/ton product	Sources emitting > 100 tons NH3/year	179
Urea production	287	Fluidized bed drilling feed grade	30104011	Ammonia	7664417	4.1 lbs/ton product	Sources emitting > 100 tons NH3/year	179

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Urea production	287	Fluidized bed drilling agric. grade	30104010	Ammonia	7664417	2.9 lbs/ton product	Sources emitting > 100 tons NH3/year	179
Urea production	287	Nonfluidized bed drilling agric. grade	30104008	Ammonia	7664417	0.87 lbs/ton product	Sources emitting > 100 tons NH3/year	179
Urea production	287	Solution formation / concentration	30104002	Ammonia	7664417	18.2 lbs/ton product	Sources emitting > 100 tons NH3/year	179
Urea production	2873	Evaporator	301040	Ammonia	7664417	3.46 lb/ton urea produced	Controlled by wet scrubber, test data for one plant	137
Urea production	2873	Granulation	30104004	Ammonia	7664417	0.5 lb/ton urea produced	Controlled by scrubber, test data	137
Urea production	2873	Prill tower	30104003	Ammonia	7664417	0.80 lb/ton urea produced	Uncontrolled, data from three plants	137
Urea-formaldehyde resin production	2821	Formaldehyde storage	407	Formaldehyde	50000	0.06-0.4 lb/ton of 37% formaldehyde used	Uncontrolled, basis unclear	104
Urea-formaldehyde resin production	2821	Process - general	30101832	Formaldehyde	50000	0.3-3.0 lb/ton of 37% formaldehyde used	Uncontrolled, basis unclear	104
Vanadium mining and processing	1094	Entire process	303024	Vanadium	7440622	25 lb/ton vanadium processed	Based on industry estimates (late 1960s/early 1970s), control status unspecified	56
Vehicle tire wear		Tire		Cadmium	7440439	1.07 x10E-8 - 1.07 x10E-5 lb/mile driven	Based on three emission factors in the literature	41
Vinyl acetate production	286	Fugitive emission - flanges	30116780	Vinyl acetate	108054	0.00094 lb/hr	Uncontrolled emission factor	214
Vinyl acetate production	286	Fugitive emission - sampling connections	30116780	Vinyl acetate	108054	0.033 lb/hr	Uncontrolled emission factor	214
Vinyl acetate production	286	Fugitive emission - compressors	30116780	Vinyl acetate	108054	0.0330 lb/hr	Uncontrolled emission factor	214
Vinyl acetate production	286	Fugitive emission - open-ended lines	30116780	Vinyl acetate	108054	0.0041 lb/hr	Uncontrolled emission factor	214
Vinyl acetate production	286	Fugitive emission - gas pressure relief devices	30116780	Vinyl acetate	108054	0.229 lb/hr	Uncontrolled emission factor	214
Vinyl acetate production	286	Fugitive emission - valves	30116780	Vinyl acetate	108054	0.00050 lb/hr	Uncontrolled emission factor for a heavy liquid	214
Vinyl acetate production	286	Fugitive emission - valves	30116780	Vinyl acetate	108054	0.00050 lb/hr	Uncontrolled emission factor for a light liquid	214
Vinyl acetate production	286	Fugitive emission - valves	30116780	Vinyl acetate	108054	0.003 lb/hr	Uncontrolled emission factor for a gas	214

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INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Vinyl acetate production	286	Fugitive emission - pump seals	30116780	Vinyl acetate	108054	0.029 lb/hr	Uncontrolled emission factor for a heavy liquid	214
Vinyl acetate production	286	Fugitive emission - pump seals	30116780	Vinyl acetate	108054	0.0044 lb/hr	Uncontrolled emission factor for a light liquid	214
Vinyl chloride monomer production	2869	Heavy ends from distillation column	503	1,2-Dichloroethane	107062	1.2-1.6 lb/ton of vinyl chloride produce	Uncontrolled, basis unspecified	51
Vinyl chloride monomer production	2869	Heavy ends from distillation column	50300501	1,2-Dichloroethane	107062	<0.032 lb/ton of vinyl chloride produced	Controlled by thermal incineration, calculated based on engineering judgement	51
Vinyl chloride monomer production	2869	Handling-transfer of heavy ends from distillation unit	30112540	Tetrachloroethylene	127184	0.0002 lb/ton VCM produced	One plant, based on estimated annual emissions divided by vinyl chloride monomer production capacity, uncontrolled	208
Vinyl chloride monomer production	2869	Storage in fixed roof tank	30112540	Tetrachloroethylene	127184	0.0006 lb/ton VCM produced	One plant, unknown control, average of 2 values, range is 4 x 10E-6 - 0.0012 lb/ton	208
Vinyl chloride monomer production	2869	Process vents	30112540	Tetrachloroethylene	127184	0.116 lb/ton VCM produced	One plant, based on estimated annual emissions divided by vinyl chloride monomer production capacity, unknown control	208
Vinyl chloride monomer production	2869	Process vents	30112540	Tetrachloroethylene	127184	0.0001 lb/ton VCM produced	One plant, based on est annual emis divided by VCM production capacity, controlled by incineration at > 98% efficiency	208
Vinyl chloride monomer production	2869	Secondary sources (wastewater, etc.)	30112540	Trichloroethylene	79016	0.0001 lb/ton VCM produced	One plant, based on estimated annual emissions divided by vinyl chloride monomer production capacity, uncontrolled	208
Vinyl chloride monomer production	2869	Handling - transfer of heavy ends from edc distillation column	30112540	Trichloroethylene	79016	2.0 x 10E-5 lb/ton VCM produced	One plant, based on estimated annual emissions divided by vinyl chloride monomer production capacity	208
Vinyl chloride monomer production	2869	Storage in fixed roof tank	30112540	Trichloroethylene	79016	0.0006 lb/ton VCM produced	One plant, based on estimated annual emissions divided by vinyl chloride monomer production capacity, uncontrolled	208
Vinyl chloride monomer production	2869	Process vents	30112540	Trichloroethylene	79016	1.6 x 10E-6 lb/ton VCM produced	One plant, based on est annual emissions divided by VCM production capacity, incineration control at > 98% efficiency	208
Vinyl toluene production	2865	Fugitive emissions	301	Toluene	108883	0.3 lb/ton used	Engineering estimate	13
Vinyl toluene production	2865	Process - general	301	Toluene	108883	1.1 lb/ton used	Engineering estimate	13
Vinyl toluene production	2865	Storage	407036	Toluene	108883	0.6 lb/ton used	Engineering estimate	13
Vinyl/asbestos tile manufacturing	3292	Entire process		Asbestos	1332214	10.8 lb/ton asbestos consumed	Calculated average uncontrolled factor, calculated range 0.24-273	100

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INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Vinyl/asbestos tile manufacturing	3292	Entire process		Asbestos	1332214	0.008 lb/ton asbestos consumed	Calculated average controlled factor, calculated range 2.4 x 10-5 to 0.28	100
Vinylidene chloride copolymer fabric. (cellophane coating)	2824	Inc. poly. stor. vents, poly. mix. & blend. vents, & finsh. poly. dry.	301125	Vinylidene chloride	75354	0.02 - 0.24 lb/ton copolymer produced	Based on counts of pumps, valves, and compressors and the average VDC wt. fraction in the streams	165
Vinylidene chloride copolymer fabric. (for extrusion)	2824	Inc. poly. stor. vents, poly. mix. & blend. vents, & finsh. poly. dry.	301125	Vinylidene chloride	75354	0.004-0.05 lb/ton copolymer produced	Based on counts of pumps, valves, and compressors and the average VDC wt. fraction in the streams	165
Vinylidene chloride copolymer fabric. (for latex coating)	2824	Inc. poly. stor. vents, poly. mix. & blend. vents, & finsh. poly. dry.	301125	Vinylidene chloride	75354	0.1 - 3 lb/ton copolymer produced	Based on counts of pumps, valves, and compressors and the average VDC wt. fraction in the streams	165
Vinylidene chloride polymerization	2824	Monomer recovery	301125	Vinylidene chloride	75354	0.66 lb/ton polymer produced	Controlled	165
Vinylidene chloride polymerization	2824	Process fugitive emissions	301125	Vinylidene chloride	75354	5.6-22 lb/ton polymer produced	Controlled	165
Vinylidene chloride polymerization	2824	Reactor	301125	Vinylidene chloride	75354	7.0 lb/ton polymer produced	Controlled	165
Vinylidene chloride polymerization	2824	Unloading/storage	301125	Vinylidene chloride	75354	4.2 lb/ton polymer produced	Controlled	165
Vinylidene chloride production	2869	Entire process	30112551	1,2-Dichloroethane	107062	11.4 lb/ton vinylidene chloride produced	Controlled, aggregate estimate based on national emissions and production estimates	51
Vinylidene chloride production	2869	Distillation vent	30112553	Vinylidene chloride	75354	1.4 lb/ton VDC produced	Uncontrolled	165
Vinylidene chloride production	2869	Distillation vent	30112553	Vinylidene chloride	75354	0.14 lb/ton VDC produced	Controlled, aqueous scrubber or refrigerated condenser (90% reduction)	165
Vinylidene chloride production	2869	Process fugitive emissions	30112555	Vinylidene chloride	75354	2.12 lb/hr	Uncontrolled (independent of plant capacity)	165
Vinylidene chloride production	2869	Process fugitive emissions	30112555	Vinylidene chloride	75354	1.68 lb/hr	Quarterly inspection and maintenance (21%)	165
Vinylidene chloride production	2869	Process fugitive emissions	30112555	Vinylidene chloride	75354	1.54 lb/hr	Monthly inspection and maintenance (29%)	165
Vinylidene chloride production	2869	Process fugitive emissions	30112555	Vinylidene chloride	75354	0.26 lb/hr	Monthly inspection & maintenance, double seals on pumps & rupture disks on relief valves, 88% reduc.	165

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INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Vinylidene chloride production	2869	Reactor vent	30112552	Vinylidene chloride	75354	12.4 lb/ton VDC produced	Uncontrolled, emis. fac. based on published data from indiv. plants& general processing techniques	165
Vinylidene chloride production	2869	Reactor vent	30112552	Vinylidene chloride	75354	<0.24 lb/ton VDC produced	Controlled (incinerator), 98+% reduction	165
Vinylidene chloride production	2869	Storage and handling emissions	301125	Vinylidene chloride	75354	0.112 lb/ton VDC produced	Controlled, unknown (typical controls are pressurized tank, refrigerated condenser)	165
Waferboard manufacture	2493	Press operation	307007	1,3-Butadiene	106990	0.47 lb/msf of waferboard produced	Average emission factor for three different resin systems	207
Waferboard manufacture	2493	Press operation	307007	Formaldehyde	50000	0.47 lb/msf of waferboard produced	Average emission factor for three different resin systems	207
Waste combustion - industrial	49	Stack - fly ash	503	Polychlorinated dibenzofurans, total		4.4 x 10E-4 lb/ton	One site tested, homologue data given in refer., isomer data may be avail. from indiv. references	116
Waste combustion - industrial	49	Stack - fly ash	503	Polychlorinated dibenzo-p-dioxins, total		0.00142 lb/ton	One site tested, homologue data given in refer., isomer data may be avail. from indiv. references	116
Waste combustion - industrial	49	Stack - fly ash	503	Tetrachlorodibenzofurans, total		2 x 10E-4 lb/ton	One site tested, homologue data given in refer., isomer data may be avail. from indiv. references	116
Waste combustion - industrial	49	Stack - fly ash	503	Tetrachlorodibenzo-p-dioxins, total		2 x 10E-4 lb/ton	One site tested, homologue data given in refer., isomer data may be avail. from indiv. references	116
Waste combustion - industrial boilers cofiring wastes	49	Flue gas	102	Polychlorinated dibenzofurans, total		0.15 - 5.5 ng/m3	Cofiring waste containing chlorinated materials, four locations	119
Waste combustion - industrial boilers cofiring wastes	49	Fly ash	102	Polychlorinated dibenzofurans, total		4 x 10E-4 lb/ton	One location, controls unknown	119
Waste combustion - industrial boilers cofiring wastes	49	Flue gas	102	Polychlorinated dibenzo-p-dioxins, total		Not detectable - 76.4 ng/m3	Cofiring waste containing chlor. mater., at upper end of range, PCDDs found in feed for 1 of 3 loc.	119
Waste combustion - industrial boilers cofiring wastes	49	Fly ash	102	Polychlorinated dibenzo-p-dioxins, total		0.0012 lb/ton	One location, controls unknown	119
Waste combustion - industrial boilers cofiring wastes	49	Flue gas	102	2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	Not detectable - <1.9 ng/m3	Cofiring waste containing chlorinated material, nine locations, detected at only two sites	119
Waste incineration	4953	Liquid waste storage	50300701	Hydrogen chloride	7647010	1.19 lbs/ton material burned		181
Waste oil combustion		Waste oil-fired boilers (<150 million Btu/h) or space heaters	1	Arsenic	7440382	0.10 lb/1000 gal oil burned	Uncontrolled, based on emissions data and engineering judgement, variable	55

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Waste oil combustion		Waste oil-fired boilers (<150 million Btu/h) or space heaters	1	Barium	7440393	3.03 lb/1000 gal oil burned	Uncontrolled, based on emissions data and engineering judgement, variable	55
Waste oil combustion		Waste oil-fired boilers (<150 million Btu/h) or space heaters	1	Benzene	71432	0.0417 lb/1000 gal oil burned	Uncontrolled, based on emissions data and engineering judgement, assumes 97% DRE	55
Waste oil combustion		Waste oil-fired boilers (<150 million Btu/h) or space heaters	1	Cadmium	7440439	0.025 lb/1000 gal oil burned	Uncontrolled, based on emissions data and engineering judgement, variable	55
Waste oil combustion		Waste oil-fired boilers (<150 million Btu/h) or space heaters	1	Carbon tetrachloride	56235	0.25 lb/1000 gal oil burned	Uncontrolled, based on emissions data and engineering judgement, assumes 97% DRE	55
Waste oil combustion		Waste oil-fired boilers (<150 million Btu/h) or space heaters	1	Chromium	7440473	0.175 lb/1000 gal oil burned	Uncontrolled, based on emissions data and engineering judgement, variable	55
Waste oil combustion		Waste oil-fired boilers (<150 million Btu/h) or space heaters	1	Hydrogen chloride	7647010	91.32 lb/1000 gal oil burned	Uncontrolled, based on emissions data and engineering judgement	55
Waste oil combustion		Waste oil-fired boilers (<150 million Btu/h) or space heaters	1	Naphthalene	91203	0.15 lb/1000 gal oil burned	Uncontrolled, based on emissions data and engineering judgement, assumes 97% DRE	55
Waste oil combustion		Waste crankcase oil	1	Nickel	7440020	0.07 lb Ni oxides/1000 gal waste oil	Control status unclear, based on source tests	144
Waste oil combustion		Waste oil-fired boilers (<150 million Btu/h) or space heaters	1	Polychlorinated biphenyls (PCBs)	1336363	0.0083 lb/1000 gal oil burned	Uncontrolled, based on emissions data and engineering judgement, assumes 97% DRE	55
Waste oil combustion		Waste oil-fired boilers (<150 million Btu/h) or space heaters	1	Tetrachloroethylene	127184	0.30 lb/1000 gal oil burned	Uncontrolled, based on emissions data and engineering judgement, assumes 97% DRE	55
Waste oil combustion		Waste oil-fired boilers (<150 million Btu/h) or space heaters	1	Toluene	108883	0.30 lb/1000 gal oil burned	Uncontrolled, based on emissions data and engineering judgement, assumes 97% DRE	55
Waste oil combustion		Waste oil-fired boilers (<150 million Btu/h) or space heaters	1	1,1,1-Trichloroethane	71556	0.325 lb/1000 gal oil burned	Uncontrolled, based on emissions data and engineering judgement, assumes 97% DRE	55
Waste oil combustion		Waste oil-fired boilers (<150 million Btu/h) or space heaters	1	Trichloroethylene	79016	0.289 lb/1000 gal oil burned	Uncontrolled, based on emissions data and engineering judgement, assumes 97% DRE	55

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Waste oil combustion		Waste oil-fired boilers (<150 million Btu/h) or space heaters	1	Zinc	7440666	6.26 lb/1000 gal oil burned	Uncontrolled, based on emissions data and engineering judgement, variable	95
Waste oil combustion - cofire PCB-spiked waste oil/No.6 oil	49	Flue gas from commercial boiler	101	Polychlorinated dibenzofurans, total		Not detectable	Waste oil = 10% total feed, one location, detection limit = 0.031 - 0.10 ug/m3	119
Waste oil combustion - cofire PCB-spiked waste oil/No.6 oil	49	Flue gas from commercial boiler	101	Polychlorinated dibenzo-p-dioxins, total		Not detectable	Waste oil = 10% total feed, one location, detection limit = 0.031 - 0.10 ug/m3	119
Wastewater treatment	2824	Wastewater emissions	301125	Vinylidene chloride	75354	1960 lb/ton VOC in wastewater feed	Based on 98% evaporation rate	145
Wastewater treatment	4941	Municipal wastewater		Chloroform	67663	1.148 x 10E-7 lb/gal mun wastewater disc		144
Wastewater treatment	4953	POTW	50100701	Acrolein	107028	180 lb/ton of acrolein in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
Wastewater treatment	4953	POTW	50100701	Acrylonitrile	107131	240 lb/ton acrylonitrile in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	60
Wastewater treatment	4953	POTW	50100701	Aniline	62533	1200 lb/ton of aniline in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
Wastewater treatment	4953	POTW	50100701	Benzene	71432	1140 lb/ton of benzene in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
Wastewater treatment	4953	POTW	50100701	1,3-Butadiene	106990	1700 lb/ton 1,3-butadiene in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	108
Wastewater treatment	4953	POTW	50100701	Carbon tetrachloride	56235	1420 lb/ton of carbon tet. in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
Wastewater treatment	4953	POTW	50100701	Chlorobenzene	108907	1040 lb/ton of chlorobenzene in influ	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
Wastewater treatment	4953	POTW	50100701	Chloroethane	75003	1340 lb/ton of ethyl chloride in influen	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
Wastewater treatment	4953	POTW	50100701	Chloroform	67663	1040 lb/ton of chloroform in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
Wastewater treatment	4953	POTW	50100701	2-Chlorophenol	95578	60 lb/ton 2-chlorophenol in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	60
Wastewater treatment	4953	POTW	50100701	2-Cresol	95487	12 lb/ton o-cresol in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Wastewater treatment	4953	POTW	50100701	4-Cresol	106445	1.8 lb/ton p-cresol in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
Wastewater treatment	4953	POTW	50100701	Dibenzofuran	132649	1940 lb/ton dibenzofuran in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	60
Wastewater treatment	4953	POTW	50100701	1,2-Dibromoethane	106934	1480 lb/ton of eth. dibromide in influen	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
Wastewater treatment	4953	POTW	50100701	1,4-Dichlorobenzene	106467	780 lb/ton 1,4-dichlorobenz. in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	60
Wastewater treatment	4953	POTW	50100701	1,3-Dichlorobenzene	541731	1000 lb/ton 1,3-dichlorobenz. in influen	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	60
Wastewater treatment	4953	POTW	50100701	1,2-Dichlorobenzene	95501	820 lb/ton 1,2-dichlorobenz. in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
Wastewater treatment	4953	POTW	50100701	1,2-Dichloroethane	107062	720 lb/ton ethylene dichlor. in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
Wastewater treatment	4953	POTW	50100701	2,4-Dichlorophenol	120832	18 lb/ton 2,4-dichlorophe. in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	60
Wastewater treatment	4953	POTW	50100701	Diethylformamide, N,N-	68122	80 lb/ton DMF in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
Wastewater treatment	4953	POTW	50100701	Ethylbenzene	100414	1120 lb/ton ethyl benzene in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
Wastewater treatment	4953	POTW	50100701	Hexachlorobenzene	118741	520 lb/ton hexachlorobenz. in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	60
Wastewater treatment	4953	POTW	50100701	Methylene chloride	75092	1040 lb/ton methylene chlor. in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
Wastewater treatment	4953	POTW	50100701	Naphthalene	91203	320 lb/ton naphthalene in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
Wastewater treatment	4953	POTW	50100701	Nitrobenzene	98953	40 lb/ton nitrobenzene in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	60
Wastewater treatment	4953	POTW	50100701	Pentachlorophenol (PCP)	87865	6 lb/ton pentachlorophenol in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59

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INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Wastewater treatment	4953	POTW	50100701	Phenol	108952	1.8 lb/ton phenol in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
Wastewater treatment	4953	POTW	50100701	Polycyclic organic matter		0-1998 lb/ton of POM in influent	Depends on comp., based on emis. model. for hypoth. POTW, repr. ave. POTW treat. indus. wastewater	60,61
Wastewater treatment	4953	POTW	50100701	Styrene	100425	1000 lb/ton styrene in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
Wastewater treatment	4953	POTW	50100701	Tetrachloroethylene	127184	1400 lb/ton perchloroethylene in influen	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
Wastewater treatment	4953	POTW	50100701	Toluene	108883	1160 lb/ton toluene in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
Wastewater treatment	4953	POTW	50100701	1,2,4-Trichlorobenzene	120821	740 lb/ton 1,2,4-trichlorob. in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
Wastewater treatment	4953	POTW	50100701	1,1,1-Trichloroethane	71556	1220 lb/ton methyl chloroform in influen	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
Wastewater treatment	4953	POTW	50100701	Trichloroethylene	79016	1240 lb/ton trichloroethylene in influe	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
Wastewater treatment	4953	POTW	50100701	Vinyl chloride	75014	1620 lb/ton vinyl chloride in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
Wastewater treatment	4953	POTW	50100701	Xylenes (mixed isomers)	1330207	1100 lb/ton total xylenes in influent	Based on emis. modeling for hypoth. POTW, represents average POTW that treats industrial wastewater	59
Wastewater treatment - organics removal by activated carbon	49	Regeneration of activated carbon using fluidized bed system - aftrburn		Polychlorinated dibenzofurans, total		0.19 - 0.39 ng/m3	With afterbur., postchlorin. of wastewater relative to activated carbon bed, detec.limit 0.006 ng/m3	119
Wastewater treatment - organics removal by activated carbon	49	Regeneration of activated carbon using fluidized bed system - recuper.		Polychlorinated dibenzofurans, total		0.015 - 4.76 ng/m3	With afterbur., postchlorin. of wastewater relative to activated carbon bed, detec.limit 0.006 ng/m3	119
Wastewater treatment - organics removal by activated carbon	49	Regeneration of activated carbon using fluidized bed system - aftrburn		Polychlorinated dibenzo-p-dioxins, total		Not detectable - 1.4 ng/m3	With afterbur., postchlorin. of wastewater relative to activated carbon bed, detec.limit 0.006 ng/m3	119
Wastewater treatment - organics removal by activated carbon	49	Regeneration of activated carbon using fluidized bed system - recuper.		Polychlorinated dibenzo-p-dioxins, total		Not detectable - 3.71 ng/m3	With afterbur., postchlorin. of wastewater relative to activated carbon bed, detec.limit 0.006 ng/m3	119
Wastewater treatment - organics removal by activated carbon	49	Regeneration of activated carbon using fluidized bed system - stack		Polychlorinated dibenzo-p-dioxins, total		1.58 ng/m3	With afterbur., postchlorin. of wastewater relative to activated carbon bed, octa, hepta homol. only	119

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INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Wastewater treatment - organics removal by activated carbon	49	Regeneration of activated carbon using fluidized bed system - flue gas		Tetrachlorodibenzofurans, total		0.08 - 0.81 ng/m3	No afterburner, prechlorin. of wastewater performed	119
Wastewater treatment - organics removal by activated carbon	49	Regeneration of activated carbon using fluidized bed system - particle		Tetrachlorodibenzofurans, total		Not detectable - 4.9 x 10E-4 lb/ton	No afterburner, prechlorin. of wastewater performed, detection limit = 8 x 10E-6 lb/ton	119
Wastewater treatment - organics removal by activated carbon	49	Regeneration of activated carbon using fluidized bed system - aftrburn		2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	Not detectable	With afterbur., postchlorin. of wastewater relative to activated carbon bed, detec.limit 0.006 ng/m3	119
Wastewater treatment - organics removal by activated carbon	49	Regeneration of activated carbon using fluidized bed system - flue gas		2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	0.01 - 0.21 ng/m3	No afterburner, prechlorin. of wastewater performed	119
Wastewater treatment - organics removal by activated carbon	49	Regeneration of activated carbon using fluidized bed system - particle		2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	8.6 x 10E-6 - 1.02 x 10E-4 lb/ton	No afterburner, prechlorin. of wastewater performed	119
Wastewater treatment - organics removal by activated carbon	49	Regeneration of activated carbon using fluidized bed system - recuper.		2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	Not detectable	With afterbur., postchlorin. of wastewater relative to activated carbon bed, detec.limit 0.006 ng/m3	119
Wastewater treatment - organics removal by activated carbon	49	Regeneration of activated carbon using fluidized bed system - stack		2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	Not detectable	With afterbur., postchlorin. of wastewater relative to activated carbon bed, detec.limit 0.006 ng/m3	119
Wastewater treatment - organics removal by activated carbon	49	Regeneration of activated carbon using fluidized bed system - flue gas		Tetrachlorodibenzo-p-dioxins, total		0.06 - 0.3 ng/m3	No afterburner, prechlorin. of wastewater performed	119
Wastewater treatment - organics removal by activated carbon	49	Regeneration of activated carbon using fluidized bed system - particle		Tetrachlorodibenzo-p-dioxins, total		7.2 x 10E-5 - 1.32 x 10E-4 lb/ton	No afterburner, prechlorin. of wastewater performed	119
Water treatment	4941	Chlorination of drinking water, evaporation		Chloroform	67663	3.42 x 10E-4 lb/10E3 gal water chlorinat		164
Wine making	2084	Fermentation	30201105	Ethyl alcohol	64175	1.06 lb/1000 gal fermented	Uncontrolled, for a 52 degree Fahrenheit tank	97
Wine making	2084	Fermentation	30201106	Ethyl alcohol	64175	4.79 lb/1000 gal fermented	Uncontrolled, for a 80 degree Fahrenheit tank	97
Wire reclamation incineration	49	Stack	5	Heptachlorodibenzofurans, total		230 ng/dscm @ 3% O2	Estimated value from stack test results	115
Wire reclamation incineration	49	Stack	5	Heptachlorodibenzo-p-dioxins, total		130 ng/dscm @ 3% O2	Estimated value from stack test results	115

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INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Wire reclamation incineration	49	Stack	S	Hexachlorodibenzofurans, total		48 ng/dscm @ 3% 02	Estimated value from stack test results	115
Wire reclamation incineration	49	Stack	S	Hexachlorodibenzo-p-dioxins, total		14 ng/dscm @ 3% 02	Estimated value from stack test results	115
Wire reclamation incineration	49	Stack	S	Octachlorodibenzofurans, total		230 ng/dscm @ 3% 02	Estimated value from stack test results	115
Wire reclamation incineration	49	Stack	S	Octachlorodibenzo-p-dioxins, total		390 ng/dscm @ 3% 02	Estimated value from stack test results	115
Wire reclamation incineration	49	Stack	S	Pentachlorodibenzofurans, total		22 ng/dscm @ 3% 02	Estimated value from stack test results	115
Wire reclamation incineration	49	Stack	S	Pentachlorodibenzo-p-dioxins, total		2.2 ng/dscm @ 3% 02	Estimated value from stack test results	115
Wire reclamation incineration	49	Stack	S	2,3,7,8-Tetrachlorodibenzofuran		0.40 ng/dscm @ 3% 02	Estimated value from stack test results	115
Wire reclamation incineration	49	Bottom ash	S	Tetrachlorodibenzofurans, total		2.32 x 10E-5 lb/ton	One facility tested	119
Wire reclamation incineration	49	Furnace - ash	S	Tetrachlorodibenzofurans, total		1.44 x 10E-6 lb/ton	One study, three furnaces	119
Wire reclamation incineration	49	Stack	S	Tetrachlorodibenzofurans, total		29 ng/dscm @ 3% 02	Estimated value from stack test results, does not include 2,3,7,8-isomer	115
Wire reclamation incineration	49	Stack - fly ash	S	Tetrachlorodibenzofurans, total		2.32 x 10E-5 lb/ton	One study, three furnaces	119
Wire reclamation incineration	49	Stack - fly ash	S	Tetrachlorodibenzofurans, total		2.32 x 10E-5 lb/ton	One site tested, homologue data given in refer., isomer data may be avail. from indiv. references	116
Wire reclamation incineration	49	Stack	S	2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	0.07 ng/dscm @ 3% 02	Estimated value from stack test results	115
Wire reclamation incineration	49	Furnace - ash	S	Tetrachlorodibenzo-p-dioxins, total		1.16 x 10E-6 lb/ton	One study, three furnaces	119
Wire reclamation incineration	49	Incinerator stack	S	Tetrachlorodibenzo-p-dioxins, total		8.2 x 10E-7 lb/ton	One facility tested	119
Wire reclamation incineration	49	Stack	S	Tetrachlorodibenzo-p-dioxins, total		1.2 ng/dscm @ 3% 02	Estimated value from stack test results, does not include 2,3,7,8-isomer	115
Wire reclamation incineration	49	Stack - fly ash	S	Tetrachlorodibenzo-p-dioxins, total		8.2 x 10E-7 lb/ton	One study, three furnaces	119

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Wire reclamation incineration	49	Stack - fly ash	0	Tetrachlorodibenzo-p-dioxins, total		8.2 x 10E-7 lb/ton	One site tested, homologue data given in refer., isomer data may be avail. from indiv. references	114
Wood combustion		Commercial	103009	Formaldehyde	50000	0.48 lb/ton	Uncontrolled, based on emission factor for residential woodstoves	94
Wood combustion		Industrial	102009	Formaldehyde	50000	0.48 lb/ton	Uncontrolled, based on emission factor for residential woodstoves	94
Wood combustion		Commercial	103009	Manganese	7439965	1.0 lb/ton wood burned	Control status unspecified, based on emission factor for residential woodstoves	94
Wood combustion		Industrial	102009	Manganese	7439965	1.0 lb/ton wood burned	Control status unspecified, based on emission factor for residential woodstoves	94
Wood combustion		Industrial stick burner boiler, white oak and mixed logs, ind/commerc	10200903	Polycyclic organic matter		0.154 lb/ton wood burned	Uncontrolled, ave. of 3 values ranging 0.013-0.174 lb/ton, represents both gaseous & particulate POM	114
Wood combustion		Industrial/commercial hot water boiler, hardwood chips	10200901	Polycyclic organic matter		0.0038 lb/ton dry fuel burned	Multiclone, represents both gaseous and particulate POM	114
Wood combustion		Industrial/commercial spreader stoker, bark	10200901	Polycyclic organic matter		0.032 lb/10E12 Btu heat input	Cyclones, represents both gaseous and particulate POM	114
Wood combustion	49	Stack, industrial wood-fired boiler	102009	Heptachlorodibenzofurans, total		4.5 ng/dscm @ 3% 02	Salt-laden wood, Tier 4 stack testing	115
Wood combustion	49	Stack, industrial wood-fired boiler	102009	Heptachlorodibenzo-p-dioxins, total		39 ng/dscm @ 3% 02	Salt-laden wood, Tier 4 stack testing	115
Wood combustion	49	Stack, industrial wood-fired boiler	102009	Hexachlorodibenzofurans, total		15 ng/dscm @ 3% 02	Salt-laden wood, Tier 4 stack testing	115
Wood combustion	49	Stack, industrial wood-fired boiler	102009	Hexachlorodibenzo-p-dioxins, total		49 ng/dscm @ 3% 02	Salt-laden wood, Tier 4 stack testing	115
Wood combustion	49	Stack, industrial wood-fired boiler	102009	Octachlorodibenzofurans, total		0.92 ng/dscm @ 3% 02	Salt-laden wood, Tier 4 stack testing	115
Wood combustion	49	Stack, industrial wood-fired boiler	102009	Octachlorodibenzo-p-dioxins, total		11 ng/dscm @ 3% 02	Salt-laden wood, Tier 4 stack testing	115
Wood combustion	49	Stack, industrial wood-fired boiler	102009	Pentachlorodibenzofurans, total		23 ng/dscm @ 3% 02	Salt-laden wood, Tier 4 stack testing	115
Wood combustion	49	Stack, industrial wood-fired boiler	102009	Pentachlorodibenzo-p-dioxins, total		48 ng/dscm @ 3% 02	Salt-laden wood, Tier 4 stack testing	115
Wood combustion	49	Stack, industrial wood-fired boiler	102009	2,3,7,8-Tetrachlorodibenzofuran		1.8 ng/dscm @ 3% 02	Salt-laden wood, Tier 4 stack testing	115

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Wood combustion	49	Stack, industrial wood-fired boiler	1020009	Tetrachlorodibenzofurans, total		37 ng/dscm @ 3% 02	Salt-laden wood, Tier 4 stack testing, does not include 2,3,7,8-isomer	115
Wood combustion	49	Stack, industrial wood-fired boiler	1020009	2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746016	0.28 ng/dscm @ 3% 02	Salt-laden wood, Tier 4 stack testing	115
Wood combustion	49	Stack, industrial wood-fired boiler	1020009	Tetrachlorodibenzo-p-dioxins, total		47 ng/dscm @ 3% 02	Salt-laden wood, Tier 4 stack testing, does not include 2,3,7,8-isomer	115
Wood combustion	495	Fluidized bed system, PCP-treated wood	5	Polychlorinated dibenzofurans, total		4.82 x 10E-4 lb/ton	Fly ash sample	119
Wood combustion	495	Incinerator, PCP-treated wood	502	Polychlorinated dibenzofurans, total		0.223 - 0.7842 lb/ton feed	Based on pilot-scale incineration, stack and smoke gas samples combined, n = 5	119
Wood combustion	495	Incinerator, PCP-treated wood	5	Polychlorinated dibenzofurans, total		587 ng/m3	Flue gas sample	119
Wood combustion	495	Fluidized bed system, PCP-treated wood	5	Polychlorinated dibenzo-p-dioxins, total		4.48 x 10E-4 lb/ton	Fly ash sample	119
Wood combustion	495	Incinerator, PCP-treated wood	501	Polychlorinated dibenzo-p-dioxins, total		0.223 - 0.784 lb/ton feed	Based on pilot-scale incineration, stack and smoke gas samples combined, n = 5	119
Wood combustion	495	Incinerator, PCP-treated wood	5	Polychlorinated dibenzo-p-dioxins, total		1520 ng/m3	Flue gas sample	119
Wood combustion, industrial		Fluidized bed, green bark	10200903	Polycyclic organic matter		0.0023 lb/ton dry wood burned	Multicyclone, represents both gaseous and particulate POM, average of 3 (0.0014 - 0.00311 lb/ton)	114
Wood combustion, industrial		Horizontal return tube boiler, green ash	10200903	Polycyclic organic matter		0.0046 lb/ton dry wood burned	Uncontrolled, represents both gaseous and particulate POM, average of 3 values (0.0032-0.0042)	114
Wood combustion, industrial		Horizontal return tube, dry hardwood	10200903	Polycyclic organic matter		1.4 x 10E-4 lb/ton dry wood burned	Multicyclone, represents both gaseous and particulate POM, average of 0.00024, 4 x 10E-5 lb/ton	114
Wood combustion, industrial		Horizontal return tube, dry hardwood	10200903	Polycyclic organic matter		0.0014 lb/ton dry wood burned	Uncontrolled, represents both gaseous and particulate POM, average of 3, 0.00044 - 0.00192 lb/ton	114
Wood combustion, industrial		Horizontal return tube, green pine/sawdust/bark	10200903	Polycyclic organic matter		0.00128 lb/ton dry wood burned	Uncontrolled, represents gaseous & particulate POM, ref. also lists 0.00846 for same boiler/fuel	114
Wood combustion, industrial		Underfeed stoker, dry hardwood	10200903	Polycyclic organic matter		0.00606 lb/ton dry wood burned	Multicyclone, represents both gaseous and particulate POM, average of 0.00456 - 0.00694 lb/ton	114
Wood combustion, industrial		Watertube, dry oak	10200903	Polycyclic organic matter		0.0044 lb/ton dry wood burned	Multiclone, represents both gaseous and particulate POM (average of 0.00228, 0.00664 lb/ton)	114
Wood combustion, industrial		Watertube, green sawdust	10200903	Polycyclic organic matter		0.00164 lb/ton dry wood burned	Multiclone, represents both gaseous and particulate POM, average of 0.00172, 0.00158 lb/ton	114

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Wood combustion, industrial	25	Balanced draft wicket stoker-fired industrial boiler	10200906	Acenaphthene	83329	2.2 x 10E-6 lb/ton	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.54 kg/s, boil. eff. 61.3%	177
Wood combustion, industrial	25	Balanced draft wicket stoker-fired industrial boiler	10200906	Acenaphthene	83329	2.2 x 10E-5 lb/ton	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 kg/s, boil. eff. 55.3%	177
Wood combustion, industrial	25	Balanced draft wicket stoker-fired industrial boiler	10200906	Acenaphthene	83329	1.1 x 10E-4 lb/ton	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.54 kg/s, boil. eff. 61.3%	177
Wood combustion, industrial	25	Horizontal return tube	10200906	Acenaphthylene	208968	4.8 x 10E-6 lb/ton	Results of GC/MS analysis of xad-2 resin extract	176
Wood combustion, industrial	25	Balanced draft wicket stoker-fired industrial boiler	10200906	Anthracene	120127	4.4 x 10E-6 lbs/ton fuel	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.54 kg/s, boil. eff. 61.3%	177
Wood combustion, industrial	25	Horizontal return tube	10200906	Barium	7440393	255.09 lb/10E12 Btu heat input	Sample results, 1 plant, wood flowrate = .514 kg/s, boiler has 3-pass design w/flyash reinjection, uncontrolled	176
Wood combustion, industrial	25	Balanced draft wicket stoker-fired industrial boiler	10200906	Barium	7440393	0.007 lb/ton fuel	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 kg/s, boil. eff. 55.3%	177
Wood combustion, industrial	25	Balanced draft wicket stoker-fired industrial boiler	10200906	Barium	7440393	0.0074 lb/ton fuel	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.54 kg/s, boil. eff. 61.3%	177
Wood combustion, industrial	25	Balanced draft wicket stoker-fired industrial boiler	10200906	Benzo(b)fluoranthene	207089	4.4 x 10E-6 lb/ton fuel	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 kg/s, boil. eff. 55.3%	177
Wood combustion, industrial	25	Horizontal return tube	10200906	Chromium	7440473	20.87 lb/10E12 Btu heat input	Sample results, 1 plant, wood flowrate = .514 kg/s, boiler has 3-pass design w/flyash reinjection, uncontrolled	176
Wood combustion, industrial	25	Balanced draft wicket stoker-fired industrial boiler	10200906	Chromium	7440473	0.0003 lb/ton fuel or 0.010 ng/J	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 kg/s, boil. eff. 55.3%	177
Wood combustion, industrial	25	Balanced draft wicket stoker-fired industrial boiler	10200906	Chromium	7440473	0.0003 lb/ton fuel or 0.014 ng/J	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.54 kg/s, boil. eff. 61.3%	177
Wood combustion, industrial	25	Balanced draft wicket stoker-fired industrial boiler	10200906	Chrysene	218019	1 x 10E-9 lb/ton	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.54 kg/s, boil. eff. 61.3%	177

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Wood combustion, industrial	25	Balanced draft wicket stoker-fired industrial boiler	10200906	Cobalt	7440484	0.0002 lb/ton fuel or 0.007 ng/J	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 kg/s, boil. eff. 55.3%	177
Wood combustion, industrial	25	Balanced draft wicket stoker-fired industrial boiler	10200906	Cobalt	7440484	1.76 x 10E-5 lb/ton fuel or 0.0007 ng/J	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.54 kg/s, boil. eff. 61.3%	177
Wood combustion, industrial	25	Horizontal return tube	10200906	Copper	7440508	44.06 lb/10E12 Btu heat input	Sample results, 1 plant, wood flowrate = .514 kg/s, boiler has 3-pass design w/flyash reinjection, uncontrolled	176
Wood combustion, industrial	25	Balanced draft wicket stoker-fired industrial boiler	10200906	Copper	7440508	0.0004 lb/ton fuel or 0.014 ng/J	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 kg/s, boil. eff. 55.3%	177
Wood combustion, industrial	25	Balanced draft wicket stoker-fired industrial boiler	10200906	Copper	7440508	0.001 lb/ton fuel or 0.049 ng/J	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.54 kg/s, boil. eff. 61.3%	177
Wood combustion, industrial	25	Horizontal return tube	10200906	Fluoranthene	206440	1.8 x 10E-6 lb/ton fuel (dry basis)	Results of GC/MS analysis of xad-2 resin extract	176
Wood combustion, industrial	25	Balanced draft wicket stoker-fired industrial boiler	10200906	Fluoranthene	206440	6.6 x 10E-6 lb/ton fuel	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.54 kg/s, boil. eff. 61.3%	177
Wood combustion, industrial	25	Balanced draft wicket stoker-fired industrial boiler	10200906	Fluoranthene	206440	2.8 x 10E-5 lb/ton fuel	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 kg/s, boil. eff. 55.3%	177
Wood combustion, industrial	25	Horizontal return tube	10200906	Iron	15438310	194.7 lb/10E12 Btu heat input	Sample results, 1 plant, wood flowrate = .514 kg/s, boiler has 3-pass design w/flyash reinjection, uncontrolled	176
Wood combustion, industrial	25	Balanced draft wicket stoker-fired industrial boiler	10200906	Iron	15438310	0.0084 lb/ton fuel or >0.24 ng/J	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 kg/s, boil. eff. 55.3%	177
Wood combustion, industrial	25	Balanced draft wicket stoker-fired industrial boiler	10200906	Iron	15438310	0.0:04 lb/ton fuel or >0.39 ng/J	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.54 kg/s, boil. eff. 61.3%	177
Wood combustion, industrial	25	Horizontal return tube	10200906	Lead	7439921	62.61 lb/10E12 Btu heat input	Sample results, 1 plant, wood flowrate = .514 kg/s, boiler has 3-pass design w/flyash reinjection, uncontrolled	176
Wood combustion, industrial	25	Balanced draft wicket stoker-fired industrial boiler	10200906	Lead	7439921	0.00022 lb/ton fuel or 0.007 ng/J	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 kg/s, boil. eff. 55.3%	177

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Wood combustion, industrial	25	Balanced draft wichee stoker-fired industrial boiler	10200904	Lead	7439921	0.00040 lb/ton fuel or 0.018 ng/J	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.54 kg/s, boil. eff. 61.3%	177
Wood combustion, industrial	25	Horizontal return tube	10200904	Naphthalene	91203	7.5 x 10E-8 lb/ton fuel (dry basis)	Results of GC/MS analysis of xad-2 resin extract	176
Wood combustion, industrial	25	Balanced draft wichee stoker-fired industrial boiler	10200904	Naphthalene	91203	2.0 x 10E-7 lb/ton fuel	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 kg/s, boil. eff. 55.3%	177
Wood combustion, industrial	25	Horizontal return tube	10200904	Nickel	7440020	259.09 lb/10E12 Btu heat input	Sample results, 1 plant, wood flowrate = .514 kg/s, boiler has 3-pass design w/flyash reinjection, uncontrolled	176
Wood combustion, industrial	25	Balanced draft wichee stoker-fired industrial boiler	10200904	Nickel	7440020	0.0052 lb/ton fuel or 347 lb/10E12 Btu	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 kg/s, boil. eff. 55.3%	177
Wood combustion, industrial	25	Balanced draft wichee stoker-fired industrial boiler	10200904	Nickel	7440020	0.0044 lb/ton fuel or 556 lb/10E12 Btu	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.54 kg/s, boil. eff. 61.3%	177
Wood combustion, industrial	25	Horizontal return tube	10200904	Phenanthrene	85018	4.8 x 10E-6 lb/ton fuel (dry basis)	Results of GC/MS analysis of xad-2 resin extract	176
Wood combustion, industrial	25	Balanced draft wichee stoker-fired industrial boiler	10200904	Phenanthrene	85018	0.00032 lb/ton fuel	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 kg/s, boil. eff. 55.3%	177
Wood combustion, industrial	25	Balanced draft wichee stoker-fired industrial boiler	10200904	Phenanthrene	85018	4.4 x 10E-5 lb/ton fuel	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.54 kg/s, boil. eff. 61.3%	177
Wood combustion, industrial	25	Horizontal return tube	10200904	Phenol	108952	8.4 x 10E-6 lb/ton fuel (dry basis)	Results of GC/MS analysis of xad-2 resin extract	176
Wood combustion, industrial	25	Balanced draft wichee stoker-fired industrial boiler	10200904	Phenol	108952	0.0002 lb/ton fuel	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 kg/s, boil. eff. 55.3%	177
Wood combustion, industrial	25	Balanced draft wichee stoker-fired industrial boiler	10200904	Phenol	108952	2.2 x 10E-5 lb/ton fuel	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.54 kg/s, boil. eff. 61.3%	177
Wood combustion, industrial	25	Horizontal return tube	10200904	Phosphorus (yellow or white)	7723140	>166.9 lb/10E12 Btu heat input	Sample results, 1 plant, wood flowrate = .514 kg/s, boiler has 3-pass design w/flyash reinjection, uncontrolled	176
Wood combustion, industrial	25	Balanced draft wichee stoker-fired industrial boiler	10200904	Phosphorus (yellow or white)	7723140	>0.007 lb/ton fuel or >46,380 lb/10E12 Btu	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 kg/s, boil. eff. 55.3%	177

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Wood combustion, industrial	25	Balanced draft wichee stoker-fired industrial boiler	10200904	Phosphorus (yellow or white)	7723140	>0.0042 lb/ton fuel or >933.4 lb/10E12 Btu	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.54 kg/s, boil. eff. 61.3%	177
Wood combustion, industrial	25	Horizontal return tube	10200904	Potassium	7440097	556 lb/10E12 Btu heat input	Sample results, 1 plant, wood flowrate = .514 kg/s, boiler has 3-pass design w/flyash reinjection, uncontrolled	176
Wood combustion, industrial	25	Balanced draft wichee stoker-fired industrial boiler	10200904	Potassium	7440097	0.0132 lb/ton fuel or >858 lb/10E12 Btu	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 kg/s, boil. eff. 55.3%	177
Wood combustion, industrial	25	Balanced draft wichee stoker-fired industrial boiler	10200904	Potassium	7440097	0.028 lb/ton fuel or >2,561 lb/10E12 Btu	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.54 kg/s, boil. eff. 61.3%	177
Wood combustion, industrial	25	Horizontal return tube	10200904	Pyrene	129000	4.6 x 10E-6 lb/ton fuel (dry basis)	Results of GC/MS analysis of xad-2 resin extract	176
Wood combustion, industrial	25	Balanced draft wichee stoker-fired industrial boiler	10200904	Pyrene	129000	1.3 x 10E-5 lb/ton fuel	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 kg/s, boil. eff. 55.3%	177
Wood combustion, industrial	25	Balanced draft wichee stoker-fired industrial boiler	10200904	Pyrene	129000	4.4 x 10E-6 lb/ton fuel	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.54 kg/s, boil. eff. 61.3%	177
Wood combustion, industrial	25	Horizontal return tube	10200904	Silver	7440224	2.55 lb/10E12 Btu heat input	Sample results, 1 plant, wood flowrate = .514 kg/s, boiler has 3-pass design w/flyash reinjection, uncontrolled	176
Wood combustion, industrial	25	Balanced draft wichee stoker-fired industrial boiler	10200904	Silver	7440224	0.034 lb/ton fuel or 3273 lb/10E12 Btu	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 kg/s, boil. eff. 55.3%	177
Wood combustion, industrial	25	Balanced draft wichee stoker-fired industrial boiler	10200904	Silver	7440224	0.00032 lb/ton fuel or 27.8 lb/10E12 Btu	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.54 kg/s, boil. eff. 61.3%	177
Wood combustion, industrial	25	Balanced draft wichee stoker-fired industrial boiler	10200904	Sodium	7440235	>0.032 lb/ton fuel or >2,018 lb/10E12 Btu	Dry wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.29 kg/s, boil. eff. 55.3%	177
Wood combustion, industrial	25	Balanced draft wichee stoker-fired industrial boiler	10200904	Sodium	7440235	>0.0082 lb/ton fuel or >718.9 lb/10E12 Btu	Green wood, one plant, particulate control w/mechanical collector (cyclone), wood feed rate 0.54 kg/s, boil. eff. 61.3%	177
Wood combustion, residential		Fireplace		Acetaldehyde	75070	0.21 lb/ton wood burned	Burning Jack Pine	130
Wood combustion, residential		Fireplace		Acetaldehyde	75070	0.4 lb/ton wood burned	Burning cedar	130

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Wood combustion, residential		Fireplace		Acetaldehyde	75070	0.14 lb/ton wood burned	Burning red oak	130
Wood combustion, residential		Fireplace		Acetaldehyde	75070	0.172 lb/ton wood burned	Burning green pine	130
Wood combustion, residential		Fireplace		Acetaldehyde	75070	1.4 lb/ton wood	Uncontrolled, average emission factor based on source tests	58
Wood combustion, residential		Fireplace		Acetaldehyde	75070	1.4 lb/ton burned	Uncontrolled	94
Wood combustion, residential		Non-baffled stove		Acetaldehyde	75070	0.2 - 0.4 lb/ton wood burned	Burning green oak or green pine	130
Wood combustion, residential		Small airtight woodstoves, birch wood		Acetaldehyde	75070	0.0228 lb/ton dry fuel burned	Normal high-temperature burning conditions, based on emission tests	57
Wood combustion, residential		Small airtight woodstoves, birch wood		Acetaldehyde	75070	1.984 lb/ton dry fuel burned	Starved air conditions, based on emission tests	57
Wood combustion, residential		Small airtight woodstoves, spruce wood		Acetaldehyde	75070	0.0344 lb/ton dry fuel burned	Normal high-temperature burning conditions, based on emission tests	57
Wood combustion, residential		Small airtight woodstoves, spruce wood		Acetaldehyde	75070	0.43 lb/ton dry fuel burned	Starved air conditions, based on emission tests	57
Wood combustion, residential		Woodstove		Acetaldehyde	75070	0.22 lb/ton wood	Uncontrolled, average emission factor based on source tests	58
Wood combustion, residential		Woodstove		Acetaldehyde	75070	0.24 lb/ton burned	Uncontrolled	94
Wood combustion, residential		Fireplace/woodstove		Acrolein	107028	0.08 lb/ton wood burned		140
Wood combustion, residential		Woodstove without baffle		Aluminum	7429905	0.003 lb/ton wood	Uncontrolled, based on one study, nonbaffled stove burning green pine	58
Wood combustion, residential		Woodstove without baffle		Antimony	7440360	4.6 x 10E-5 lb/ton wood	Uncontrolled, based on one study, nonbaffled stove burning green pine	58
Wood combustion, residential		Woodstove without baffle		Arsenic	7440382	2.6 x 10E-4 lb/ton wood	Uncontrolled, based on one study, nonbaffled stove burning green pine	58
Wood combustion, residential		Woodstove without baffle		Barium	7440393	4 x 10E-4 lb/ton wood	Uncontrolled, based on one study, nonbaffled stove burning green pine	58
Wood combustion, residential		Small airtight woodstoves, birch wood		Benzene	71432	0.1356 lb/ton dry fuel burned	Normal high-temperature burning conditions, based on emission tests	57

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Wood combustion, residential		Small airtight woodstoves, birch wood		Benzene	71432	2.572 lb/ton dry fuel burned	Starved air conditions, based on emission tests	57
Wood combustion, residential		Small airtight woodstoves, spruce wood		Benzene	71432	0.538 lb/ton dry fuel burned	Starved air conditions, based on emission tests	57
Wood combustion, residential		Small airtight woodstoves, birch wood		Benzo(a)pyrene	50328	0.0012 lb/ton dry fuel burned	Normal high-temperature burning conditions, based on emission tests	57
Wood combustion, residential		Small airtight woodstoves, birch wood		Benzo(a)pyrene	50328	4.8 x 10E-4 lb/ton dry fuel burned	Starved air conditions, based on emission tests	57
Wood combustion, residential		Small airtight woodstoves, spruce wood		Benzo(a)pyrene	50328	1 x 10E-4 lb/ton dry fuel burned	Normal high-temperature burning conditions, based on emission tests	57
Wood combustion, residential		Small airtight woodstoves, spruce wood		Benzo(a)pyrene	50328	0.00124 lb/ton dry fuel burned	Starved air conditions, based on emission tests	57
Wood combustion, residential		Woodstove without baffle		Beryllium	7440417	2.8 x 10E-7 lb/ton wood	Uncontrolled, based on one study, nonbaffled stove burning green pine	58
Wood combustion, residential		Woodstove without baffle		Boron	7440428	0.00146 lb/ton wood	Uncontrolled, based on one study, nonbaffled stove burning green pine	58
Wood combustion, residential		Fireplace		Butyraldehyde	123728	0.4 lb/ton wood burned	Uncontrolled, average emission factor based on source tests	58
Wood combustion, residential		Woodstove		Butyraldehyde	123728	0.94 lb/ton wood burned	Uncontrolled, average emission factor based on source tests	58
Wood combustion, residential		Woodstove without baffle		Cadmium	7440439	7.2 x 10E-5 lb/ton wood	Uncontrolled, based on one study, nonbaffled stove burning green pine	58
Wood combustion, residential		Woodstove without baffle		Chromium	7440473	0.0018 lb/ton wood burned	Uncontrolled, based on one study, nonbaffled stove burning green pine	58
Wood combustion, residential		Woodstove without baffle		Cobalt	7440484	1.2 x 10E-4 lb/ton wood burned	Uncontrolled, based on one study, nonbaffled stove burning green pine	58
Wood combustion, residential		Woodstove without baffle		Copper	7440508	3.4 x 10E-4 lb/ton wood burned	Uncontrolled, based on one study, nonbaffled stove burning green pine	58
Wood combustion, residential		Fireplace		Formaldehyde	50000	3.0 lb/ton of wood burned	Uncontrolled, based on source test	58
Wood combustion, residential		Small airtight woodstoves, birch wood		Formaldehyde	50000	0.1156 lb/ton dry fuel burned	Normal high-temperature burning conditions, based on emission tests	57
Wood combustion, residential		Small airtight woodstoves, birch wood		Formaldehyde	50000	3.444 lb/ton dry fuel burned	Starved air conditions, based on emission tests	57

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INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Wood combustion, residential		Small airtight woodstoves, spruce wood		Formaldehyde	50000	0.0828 lb/ton dry fuel burned	Normal high-temperature burning conditions, based on emission tests	57
Wood combustion, residential		Small airtight woodstoves, spruce wood		Formaldehyde	50000	0.51 lb/ton dry fuel burned	Starved air conditions, based on emission tests	57
Wood combustion, residential		Woodstove		Formaldehyde	50000	0.48 lb/ton of wood burned	Uncontrolled, based on source test	58
Wood combustion, residential		Fireplace		Isobutyraldehyde	78842	2.8 lb/ton wood burned	Uncontrolled, average emission factor based on source tests	58
Wood combustion, residential		Woodstove		Isobutyraldehyde	78842	3 lb/ton wood burned	Uncontrolled, average emission factor based on source tests	58
Wood combustion, residential		Fireplace		Manganese	7439965	1.0 lb/ton wood burned	Control status and basis unspecified	94
Wood combustion, residential		Woodstove		Manganese	7439965	1.0 lb/ton wood burned	Control status and basis unspecified	94
Wood combustion, residential		Woodstove or fireplace		Manganese	7439965	1.0 lb/ton burned	Uncontrolled	94
Wood combustion, residential		Woodstove without baffle		Manganese	7439965	3.8 x 10E-4 lb/ton wood burned	Uncontrolled, based on one study, nonbaffled stove burning green pine	58
Wood combustion, residential		Woodstove without baffle		Mercury	7439976	2.6 x 10E-4 lb/ton wood burned	Uncontrolled, based on one study, nonbaffled stove burning green pine	58
Wood combustion, residential		Woodstove without baffle		Molybdenum	7439987	4.4 x 10E-4 lb/ton wood burned	Uncontrolled, based on one study, nonbaffled stove burning green pine	58
Wood combustion, residential		Woodstove without baffle		Nickel	7440020	0.0034 lb/ton wood burned	Uncontrolled, based on one study, nonbaffled stove burning green pine	58
Wood combustion, residential		Woodstove or fireplace		Phenols		2.0 lb/ton wood burned	Uncontrolled	94
Wood combustion, residential		Woodstove without baffle		Phosphorus (yellow or white)	7723140	1.4 x 10E-4 lb/ton wood burned	Uncontrolled, based on one study, nonbaffled stove burning green pine	58
Wood combustion, residential		Baffled catalytic woodstove		Polycyclic organic matter		0.3264 lb/ton fuel burned	Uncontrolled, represents both gaseous and particulate POM, but all were found in gaseous phase	114
Wood combustion, residential		Baffled woodstove		Polycyclic organic matter		0.5834 lb/ton fuel burned	Uncontrolled, represents both gaseous and particulate emissions, average of 2 values	114
Wood combustion, residential		Fireplace		Polycyclic organic matter		0.065 lb/ton fuel burned	Uncontrolled, represents both gaseous and particulate POM, average of 3 values	114

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Wood combustion, residential		Fireplace		Polycyclic organic matter		3.8 x 10E-6 lb/ton fuel burned	Uncontrolled, represents only particulate POM, average of 3 values	114
Wood combustion, residential		Fluidized bed furnace, pine wood chips		Polycyclic organic matter		0.3034 lb/ton fuel burned	Baghouse, represents both gaseous and particulate POM, average of 2 values	114
Wood combustion, residential		Fluidized bed furnace, pine wood chips		Polycyclic organic matter		0.6074 lb/ton fuel burned	Uncontrolled, represents both gaseous and particulate POM, average of 2 values	114
Wood combustion, residential		Nonbaffled catalytic woodstove		Polycyclic organic matter		0.0944 lb/ton fuel burned	Uncontrolled, represents both gaseous and particulate POM, but all were found in gaseous phase	114
Wood combustion, residential		Nonbaffled catalytic woodstove		Polycyclic organic matter		0.4034 lb/ton fuel burned	Uncontrolled, represents both gaseous and particulate POM, but all were found in gaseous phase	114
Wood combustion, residential		Nonbaffled woodstove		Polycyclic organic matter		0.3922 lb/ton fuel burned	Uncontrolled, represents both gaseous and particulate POM, average of 4 values	114
Wood combustion, residential		Small airtight woodstoves, birch wood		Polycyclic organic matter		0.0418 lb/ton dry fuel burned	Normal high-temperature burning conditions, based on emission tests	57
Wood combustion, residential		Small airtight woodstoves, birch wood		Polycyclic organic matter		0.0402 lb/ton dry fuel burned	Starved air conditions, based on emission tests	57
Wood combustion, residential		Small airtight woodstoves, spruce wood		Polycyclic organic matter		0.0052 lb/ton dry fuel burned	Normal high-temperature burning conditions, based on emission tests	57
Wood combustion, residential		Small airtight woodstoves, spruce wood		Polycyclic organic matter		0.0646 lb/ton dry fuel burned	Normal high-temperature burning conditions, based on emission tests	57
Wood combustion, residential		Woodstove with secondary combustion		Polycyclic organic matter		0.1494 lb/ton fuel burned	Uncontrolled, represents both gaseous and particulate POM, but all were found in gaseous phase	114
Wood combustion, residential		Woodstove		Propionaldehyde	123386	0.3 lb/ton wood	Uncontrolled, average emission factor based on source tests	58
Wood combustion, residential		Woodstove without baffle		Selenium	7782492	2.6 x 10E-4 lb/ton wood	Uncontrolled, based on one study, nonbaffled stove burning green pine	58
Wood combustion, residential		Small airtight woodstoves, birch wood		Toluene	108883	0.0334 lb/ton dry fuel burned	Normal high-temperature burning conditions, based on emission tests	57
Wood combustion, residential		Small airtight woodstoves, birch wood		Toluene	108883	4.544 lb/ton dry fuel burned	Starved air conditions, based on emission tests	57
Wood combustion, residential		Small airtight woodstoves, spruce wood		Toluene	108883	0.748 lb/ton dry fuel burned	Starved air conditions, based on emission tests	57
Wood combustion, residential		Woodstove without baffle		Vanadium	7440622	3 x 10E-5 lb/ton wood	Uncontrolled, based on one study, nonbaffled stove burning green pine	58

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Wood preserving	2491	Creosote conditioning	30700501	Anthracene	120127	0.0009 lbs/hr	Based on one sampling program at one facility	10
Wood preserving	2491	Creosote cool-down	307005	Anthracene	120127	0.0012 lbs/hr	Based on one sampling program at one facility	10
Wood preserving	2491	Pentachlorophenol conditioning	30700597	Anthracene	120127	0.0011 lbs/hr	Based on one sampling program at one facility	10
Wood preserving	2491	Pentachlorophenol cool-down	30700597	Anthracene	120127	0.0009 lbs/hr	Based on one sampling program at one facility	10
Wood preserving	2491	Pentachlorophenol treating - fugitive	30700597	Anthracene	120127	0.012 lbs/hr	Based on one sampling program at one facility	10
Wood preserving	2491	Incineration of waste	307005	Benzene	71432	Not detectable	Controlled with baghouse	6
Wood preserving	2491	Thermal (pan) evaporation of pentachlorophenol wastewater		Benzene	71432	<5 mg/sm3 gas vented	Average value	6
Wood preserving	2491	Incineration of waste	307005	Ethylbenzene	100414	Not detectable	Controlled with baghouse	6
Wood preserving	2491	Thermal (pan) evaporation of pentachlorophenol wastewater		Ethylbenzene	100414	<5 mg/sm3 gas vented	Average value	6
Wood preserving	2491	Creosote conditioning	30700501	Naphthalene	91203	2.2 lbs/hr	Based on one sampling program at one facility	10
Wood preserving	2491	Creosote cool-down	307005	Naphthalene	91203	1.06 lbs/hr	Based on one sampling program at one facility	10
Wood preserving	2491	Creosote treating cylinder fugitives	307005	Naphthalene	91203	2.8 mg/sm3 gas leaked	One measurement	6
Wood preserving	2491	Incineration of waste	307005	Naphthalene	91203	290 ug/sm3 stack gas	Controlled with baghouse, average value	6
Wood preserving	2491	Penta treating cylinder fugitives	307005	Naphthalene	91203	2.4 mg/sm3 gas leaked	Average of 3 measurements	6
Wood preserving	2491	Pentachlorophenol conditioning	30700597	Naphthalene	91203	2.29 lbs/hr	Based on one sampling program at one facility	10
Wood preserving	2491	Pentachlorophenol cool-down	30700597	Naphthalene	91203	0.99 lbs/hr	Based on one sampling program at one facility	10
Wood preserving	2491	Pentachlorophenol treating - fugitive	30700597	Naphthalene	91203	0.24 lbs/hr	Based on one sampling program at one facility	10
Wood preserving	2491	Thermal (pan) evaporation of creosote wastewater		Naphthalene	91203	2500 mg/sm3 gas vented	Average value	6
Wood preserving	2491	Thermal (pan) evaporation of pentachlorophenol wastewater		Naphthalene	91203	2000 mg/sm3 gas vented	Average value	6

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Wood preserving	2491	Creosote conditioning	30700501	Pentachlorophenol (PCP)	87865	0.0009 lbs/hr	Based on one sampling program at one facility	10
Wood preserving	2491	Creosote cool-down	307005	Pentachlorophenol (PCP)	87865	0.0012 lbs/hr	Based on one sampling program at one facility	10
Wood preserving	2491	Creosote treating cylinder fugitives	307005	Pentachlorophenol (PCP)	87865	0.63 mg/m3 gas leaked	One measurement	6
Wood preserving	2491	Incineration of waste	307005	Pentachlorophenol (PCP)	87865	Not detectable	Controlled with baghouse	6
Wood preserving	2491	Penta treating cylinder fugitives	307005	Pentachlorophenol (PCP)	87865	3.6 mg/m3 gas leaked	Average of 3 measurements	6
Wood preserving	2491	Pentachlorophenol conditioning	30700597	Pentachlorophenol (PCP)	87865	0.0011 lbs/hr	Based on one sampling program at one facility	10
Wood preserving	2491	Pentachlorophenol cool-down	30700597	Pentachlorophenol (PCP)	87865	0.0009 lbs/hr	Based on one sampling program at one facility	10
Wood preserving	2491	Pentachlorophenol treating - fugitive	30700597	Pentachlorophenol (PCP)	87865	0.72 lbs/hr	Based on one sampling program at one facility	10
Wood preserving	2491	Thermal (pan) evaporation of creosote wastewater		Pentachlorophenol (PCP)	87865	2 mg/m3 gas vented	Average value	6
Wood preserving	2491	Thermal (pan) evaporation of pentachlorophenol wastewater		Pentachlorophenol (PCP)	87865	10,000 mg/m3 gas vented	Average value	6
Wood preserving	2491	Creosote treating cylinder fugitives	307005	Phenol	108952	0.11 mg/m3 gas leaked	One measurement	6
Wood preserving	2491	Incineration of waste	307005	Phenol	108952	3.0 ug/m3 stack gas	Controlled with baghouse, average value	6
Wood preserving	2491	Penta treating cylinder fugitives	307005	Phenol	108952	0.55 mg/m3 gas leaked	Average of 3 measurements	6
Wood preserving	2491	Thermal (pan) evaporation of creosote wastewater		Phenol	108952	30 mg/m3 gas vented	Average value	6
Wood preserving	2491	Thermal (pan) evaporation of pentachlorophenol wastewater		Phenol	108952	200 mg/m3 gas vented	Average value	6
Wood preserving	2491	Incineration of waste	307005	Toluene	108883	Not detectable	Controlled with baghouse	6
Wood preserving	2491	Thermal (pan) evaporation of pentachlorophenol wastewater		Toluene	108883	<5 mg/m3 gas vented	Average value	6
Wood preserving	2491	Application and handling of 1,2,4-TCB containing preservative	307	1,2,4-Trichlorobenzene	120821	20 lbs/ton 1,2,4-TCB used	Based on emissions estimate of <1% lost of total use	48

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Woven fabric finishing	226	Curing oven - resin finish	330001	Aluminum	7429905	3.6 x 10E-5 lb/ton fabric	Uncontrolled, one test	52
Woven fabric finishing	226	Heat setting	330001	Aluminum	7429905	4 x 10E-5 lb/ton fabric	Uncontrolled, based on test data	52
Woven fabric finishing	226	Tenter frames - resin finishing	330001	Aluminum	7429905	0.0026 lb/ton fabric	Uncontrolled, average of four tests	52
Woven fabric finishing	226	Thermosol dyeing	330001	Aluminum	7429905	2.2 x 10E-4 lb/ton fabric	Uncontrolled, average of three tests	52
Woven fabric finishing	226	Curing oven - resin finish	330001	Anthraquinone	84651	0.013 lb/ton fabric	Uncontrolled, average of two tests	52
Woven fabric finishing	226	Tenter frames - resin finish	330001	Anthraquinone	84651	0.0062 lb/ton fabric	Uncontrolled, average of two tests	52
Woven fabric finishing	226	Thermosol dyeing	330001	Anthraquinone	84651	0.0192 lb/ton fabric	Uncontrolled, average of two tests	52
Woven fabric finishing	226	Curing oven - resin finish	330001	Antimony	7440360	1.76 x 10E-4 lb/ton fabric	Uncontrolled, one test	52
Woven fabric finishing	226	Heat setting	330001	Antimony	7440360	1.14 x 10E-4 lb/ton fabric	Uncontrolled, based on test data	52
Woven fabric finishing	226	Tenter frames - resin finishing	330001	Antimony	7440360	0.00126 lb/ton fabric	Uncontrolled, average of two tests	52
Woven fabric finishing	226	Thermosol dyeing	330001	Antimony	7440360	1.24 x 10E-4 lb/ton fabric	Uncontrolled, average of two tests	52
Woven fabric finishing	226	Curing oven - resin finish	330001	Barium	7440393	3.8 x 10E-5 lb/ton fabric	Uncontrolled, average of three tests	52
Woven fabric finishing	226	Heat setting	330001	Barium	7440393	7.2 x 10E-6 lb/ton fabric	Uncontrolled, based on test data	52
Woven fabric finishing	226	Tenter frames - resin finishing	330001	Barium	7440393	8 x 10E-5 lb/ton fabric	Uncontrolled, average of four tests	52
Woven fabric finishing	226	Thermosol dyeing	330001	Barium	7440393	7.8 x 10E-5 lb/ton fabric	Uncontrolled, average of three tests	52
Woven fabric finishing	226	Curing oven - resin finish	330001	Benzoic acid	65850	0.26 lb/ton fabric	Uncontrolled, one test	52
Woven fabric finishing	226	Tenter frames - resin finish	330001	Benzoic acid	65850	0.0142 lb/ton fabric	Uncontrolled, test data	52
Woven fabric finishing	226	Curing oven - resin finish	330001	Benzoic acid, butyl ester	136607	1.2 lb/ton fabric	Uncontrolled, average of three tests	52
Woven fabric finishing	226	Curing oven - resin finish	330001	Beryllium	7440417	8.6 x 10E-6 lb/ton fabric	Uncontrolled, one test	52

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Woven fabric finishing	226	Heat setting	330001	Beryllium	7440417	1.3 x 10E-5 lb/ton fabric	Uncontrolled, based on test data	52
Woven fabric finishing	226	Tenter frames - resin finishing	330001	Beryllium	7440417	1.92 x 10E-5 lb/ton fabric	Uncontrolled, one test	52
Woven fabric finishing	226	Thermosol dyeing	330001	Beryllium	7440417	3.8 x 10E-7 lb/ton fabric	Uncontrolled, one test	52
Woven fabric finishing	226	Curing oven - resin finish	330001	Bibenzyl	103297	0.0062 lb/ton fabric	Uncontrolled, one test	52
Woven fabric finishing	226	Tenter frames - resin finish	330001	Bibenzyl	103297	0.0028 lb/ton fabric	Uncontrolled, one test	52
Woven fabric finishing	226	Curing oven - resin finish	330001	Biphenyl	92524	0.0066 lb/ton fabric	Uncontrolled, average of three tests	52
Woven fabric finishing	226	Tenter frames - resin finish	330001	Biphenyl	92524	0.1 lb/ton fabric	Uncontrolled, test data	52
Woven fabric finishing	226	Thermosol dyeing	330001	Biphenyl	92524	0.0066 lb/ton fabric	Uncontrolled, average of two tests	52
Woven fabric finishing	226	Curing oven - resin finish	330001	Boron	7440428	7.4 x 10E-5 lb/ton fabric	Uncontrolled, average of three tests	52
Woven fabric finishing	226	Heat setting	330001	Boron	7440428	5 x 10E-6 lb/ton fabric	Uncontrolled, based on test data	52
Woven fabric finishing	226	Tenter frames - resin finishing	330001	Boron	7440428	1.5 x 10E-4 lb/ton fabric	Uncontrolled, average of four tests	52
Woven fabric finishing	226	Thermosol dyeing	330001	Boron	7440428	1.54 x 10E-4 lb/ton fabric	Uncontrolled, average of three tests	52
Woven fabric finishing	226	Thermosol dyeing	330001	4-Bromochlorobenzene	106398	2.6 x 10E-4 lb/ton fabric	Uncontrolled, average of two tests	52
Woven fabric finishing	226	Thermosol dyeing	330001	2-Bromo-4,6-dinitroaniline	1817738	0.0024 lb/ton fabric	Uncontrolled, one test	52
Woven fabric finishing	226	Curing oven - resin finish	330001	1-Bromo-2,4-dinitrobenzene	584485	0.0114 lb/ton fabric	Uncontrolled, average of two tests	52
Woven fabric finishing	226	Tenter frames - resin finish	330001	1-Bromo-2,4-dinitrobenzene	584485	0.042 lb/ton fabric	Uncontrolled	52
Woven fabric finishing	226	Thermosol dyeing	330001	1-Bromo-2,4-dinitrobenzene	584485	0.0066 lb/ton fabric	Uncontrolled, average of three tests	52
Woven fabric finishing	226	Curing oven - resin finish	330001	Cadmium	7440439	5.8 x 10E-5 lb/ton fabric	Uncontrolled, average of two tests	52
Woven fabric finishing	226	Heat setting	330001	Cadmium	7440439	9.2 x 10E-6 lb/ton fabric	Uncontrolled, based on test data	52

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Woven fabric finishing	226	Tenter frames - resin finishing	330001	Cadmium	7440439	3.8 x 10E-5 lb/ton fabric	Uncontrolled, average of four tests	52
Woven fabric finishing	226	Thermosol dyeing	330001	Cadmium	7440439	3.4 x 10E-6 lb/ton fabric	Uncontrolled, average of three tests	52
Woven fabric finishing	226	Curing oven - resin finish	330001	Chromium	7440473	6 x 10E-4 lb/ton fabric	Uncontrolled, average of three tests	52
Woven fabric finishing	226	Heat setting	330001	Chromium	7440473	3.4 x 10E-5 lb/ton fabric	Uncontrolled, based on test data, total chromium	52
Woven fabric finishing	226	Tenter frames - resin finishing	330001	Chromium	7440473	0.00106 lb/ton fabric	Uncontrolled, average of four tests	52
Woven fabric finishing	226	Thermosol dyeing	330001	Chromium	7440473	2.4 x 10E-4 lb/ton fabric	Uncontrolled, average of three tests, total chromium	52
Woven fabric finishing	226	Curing oven - resin finish	330001	Cobalt	7440484	3.6 x 10E-5 lb/ton fabric	Uncontrolled, average of three tests	52
Woven fabric finishing	226	Heat setting	330001	Cobalt	7440484	3.4 x 10E-5 lb/ton fabric	Uncontrolled, based on test data	52
Woven fabric finishing	226	Tenter frames - resin finishing	330001	Cobalt	7440484	1.72 x 10E-4 lb/ton fabric	Uncontrolled, average of four tests	52
Woven fabric finishing	226	Thermosol dyeing	330001	Cobalt	7440484	1.02 x 10E-5 lb/ton fabric	Uncontrolled, average of three tests	52
Woven fabric finishing	226	Curing oven - resin finish	330001	Copper	7440508	0.001 lb/ton fabric	Uncontrolled, average of three tests	52
Woven fabric finishing	226	Heat setting	330001	Copper	7440508	1.22 x 10E-5 lb/ton fabric	Uncontrolled, based on test data	52
Woven fabric finishing	226	Tenter frames - resin finishing	330001	Copper	7440508	5.2 x 10E-4 lb/ton fabric	Uncontrolled, average of four tests	52
Woven fabric finishing	226	Thermosol dyeing	330001	Copper	7440508	0.008 lb/ton fabric	Uncontrolled, average of three tests	52
Woven fabric finishing	226	Heat setting	330001	Dibutyl phthalate	84742	8.3 x 10E-4 lb/ton fabric	Uncontrolled, based on test data	52
Woven fabric finishing	226	Tenter frames - resin finish	330001	Dibutyl phthalate	84742	0.0028 lb/ton fabric	Uncontrolled, test data	52
Woven fabric finishing	226	Curing oven - resin finish	330001	Dichlorobenzene (mixed isomers)	25321226	1.28 x 10E-4 lb/ton fabric	Uncontrolled, one test	52
Woven fabric finishing	226	Tenter frames - resin finishing	330001	Dichlorobenzene (mixed isomers)	25321226	0.032 lb/ton fabric	Test at one plant	52
Woven fabric finishing	226	Thermosol dyeing	330001	Dichlorobenzene (mixed isomers)	25321226	0.0032 lb/ton fabric	Uncontrolled, one test	52

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Woven fabric finishing	226	Curing oven - resin finish	330001	2,4-Dichloro-6-nitroaniline	2683434	0.0098 lb/ton fabric	Uncontrolled, average of two tests	52
Woven fabric finishing	226	Tenter frames - resin finish	330001	2,4-Dichloro-6-nitroaniline	2683434	0.0046 lb/ton fabric	Uncontrolled, one test	52
Woven fabric finishing	226	Thermosol dyeing	330001	2,4-Dichloro-6-nitroaniline	2683434	0.0012 lb/ton fabric	Uncontrolled, one test	52
Woven fabric finishing	226	Heat setting	330001	Diethyl phthalate	84662	5 x 10E-4 lb/ton fabric	Uncontrolled, based on test data	52
Woven fabric finishing	226	Tenter frames - resin finish	330001	Diethyl phthalate	84662	6.8 x 10E-4 lb/ton fabric	Uncontrolled, test data	52
Woven fabric finishing	226	Thermosol dyeing	330001	Diethyl phthalate	84662	9 x 10E-4 lb/ton fabric	Uncontrolled, average of two tests	52
Woven fabric finishing	226	Curing oven - resin finish	330001	Diethyl phthalate	131113	0.042 lb/ton fabric	Uncontrolled, average of three tests	52
Woven fabric finishing	226	Tenter frames - resin finish	330001	Diethyl phthalate	131113	0.26 lb/ton fabric	Uncontrolled, test data	52
Woven fabric finishing	226	Thermosol dyeing	330001	Diethyl phthalate	131113	0.0038 lb/ton fabric	Uncontrolled, average of two tests	52
Woven fabric finishing	226	Heat setting	330001	Dipropyl phthalate	131168	6.6 x 10E-4 lb/ton fabric	Uncontrolled, based on test data	52
Woven fabric finishing	226	Tenter frames - resin finish	330001	Dipropyl phthalate	131168	4.2 x 10E-5 lb/ton fabric	Uncontrolled, test data	52
Woven fabric finishing	226	Thermosol dyeing	330001	Dipropyl phthalate	131168	1.44 x 10E-4 lb/ton fabric	Uncontrolled, average of two tests	52
Woven fabric finishing	226	Curing oven - resin finish	330001	Divinyl benzene, (mixed isomers)	1321740	0.00128 lb/ton fabric	Uncontrolled, one test	52
Woven fabric finishing	226	Tenter frames - resin finish	330001	Divinyl benzene, (mixed isomers)	1321740	8.4 x 10E-4 lb/ton fabric	Uncontrolled, average of two tests	52
Woven fabric finishing	226	Thermosol dyeing	330001	2-Ethyl hexanol	123057	0.0042 lb/ton fabric	Uncontrolled, one test	52
Woven fabric finishing	226	Curing oven - resin finish	330001	Ethyl styrene	28106301	0.0092 lb/ton fabric	Uncontrolled, average of two tests	52
Woven fabric finishing	226	Tenter frames - resin finish	330001	Ethyl styrene	28106301	0.0078 lb/ton fabric	Uncontrolled, average of two tests	52
Woven fabric finishing	226	Thermosol dyeing	330001	Ethyl styrene	28106301	0.00108 lb/ton fabric	Uncontrolled, one test	52
Woven fabric finishing	226	Curing oven - resin finish	330001	Manganese	7439965	1.48 x 10E-4 lb/ton fabric	Uncontrolled, average of three tests	52

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Woven fabric finishing	226	Heat setting	330001	Manganese	7439965	2.3 x 10E-5 lb/ton fabric	Uncontrolled, based on test data	52
Woven fabric finishing	226	Tenter frames - resin finishing	330001	Manganese	7439965	1.44 x 10E-4 lb/ton fabric	Uncontrolled, average of four tests	52
Woven fabric finishing	226	Thermosol dyeing	330001	Manganese	7439965	9.8 x 10E-5 lb/ton fabric	Uncontrolled, average of three tests	52
Woven fabric finishing	226	Curing oven - resin finish	330001	Molybdenum	7439987	1.34 x 10E-4 lb/ton fabric	Uncontrolled, average of two tests	52
Woven fabric finishing	226	Heat setting	330001	Molybdenum	7439987	4.8 x 10E-6 lb/ton fabric	Uncontrolled, based on test data	52
Woven fabric finishing	226	Tenter frames - resin finishing	330001	Molybdenum	7439987	8.6 x 10E-6 lb/ton fabric	Uncontrolled, average of three tests	52
Woven fabric finishing	226	Thermosol dyeing	330001	Molybdenum	7439987	6 x 10E-5 lb/ton fabric	Uncontrolled, average of three tests	52
Woven fabric finishing	226	Curing oven - resin finish	330001	Naphthalene	91203	0.004 lb/ton fabric	Uncontrolled, average of three tests	52
Woven fabric finishing	226	Tenter frames - resin finish	330001	Naphthalene	91203	0.0034 lb/ton fabric	Uncontrolled, average of two tests	52
Woven fabric finishing	226	Thermosol dyeing	330001	Naphthalene	91203	0.002 lb/ton fabric	Uncontrolled, average of two tests	52
Woven fabric finishing	226	Heat setting	330001	Nickel	7440020	1.24 x 10E-5 lb/ton fabric	Uncontrolled, based on test data	52
Woven fabric finishing	226	Tenter frames - resin finishing	330001	Nickel	7440020	8.2 x 10E-6 lb/ton fabric	Uncontrolled, average of four tests	52
Woven fabric finishing	226	Thermosol dyeing	330001	Nickel	7440020	1.82 x 10E-4 lb/ton fabric	Uncontrolled, average of two tests	52
Woven fabric finishing	226	Curing oven - resin finish	330001	Phosphorus (yellow or white)	7723140	7.8 x 10E-6 lb/ton fabric	Uncontrolled, average of three tests	52
Woven fabric finishing	226	Heat setting	330001	Phosphorus (yellow or white)	7723140	1.9 x 10E-6 lb/ton fabric	Uncontrolled, based on test data	52
Woven fabric finishing	226	Tenter frames - resin finishing	330001	Phosphorus (yellow or white)	7723140	3.6 x 10E-3 lb/ton fabric	Uncontrolled, average of four tests	52
Woven fabric finishing	226	Thermosol dyeing	330001	Phosphorus (yellow or white)	7723140	3.4 x 10E-6 lb/ton fabric	Uncontrolled, average of two tests	52
Woven fabric finishing	226	Tenter frames - resin finish	330001	Polydimethyl siloxane	9016004	0.0019 lb/ton fabric	Uncontrolled, one test	52
Woven fabric finishing	226	Heat setting	330001	Silver	7440224	2.6 x 10E-5 lb/ton fabric	Uncontrolled, based on test data	52

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Woven fabric finishing	226	Tenter frames - resin finishing	330001	Silver	7440224	3.8 x 10E-4 lb/ton fabric	Uncontrolled, average of four tests	52
Woven fabric finishing	226	Thermosol dyeing	330001	Silver	7440224	0.0012 lb/ton fabric	Uncontrolled, average of two tests	52
Woven fabric finishing	226	Heat setting	330001	Strontium	7440246	6.8 x 10E-6 lb/ton fabric	Uncontrolled, based on test data	52
Woven fabric finishing	226	Thermosol dyeing	330001	Strontium	7440246	9.8 x 10E-6 lb/ton fabric	Uncontrolled, average of three tests	52
Woven fabric finishing	226	Tenter frames - resin finish	330001	Tetrachlorobenzenes		0.034 lb/ton fabric	Uncontrolled, based on one test	52
Woven fabric finishing	226	Curing oven - resin finish	330001	Tin	7440315	0.00186 lb/ton fabric	Uncontrolled, average of three tests	52
Woven fabric finishing	226	Heat setting	330001	Tin	7440315	0.00162 lb/ton fabric	Uncontrolled, based on test data	52
Woven fabric finishing	226	Tenter frames - resin finishing	330001	Tin	7440315	0.0038 lb/ton fabric	Uncontrolled, average of four tests	52
Woven fabric finishing	226	Thermosol dyeing	330001	Tin	7440315	6.8 x 10E-4 lb/ton fabric	Uncontrolled, average of three tests	52
Woven fabric finishing	226	Heat setting	330001	Titanium	7440326	0 x 10E-7 lb/ton fabric	Uncontrolled, based on test data	52
Woven fabric finishing	226	Curing oven - resin finish	330001	Trichlorobenzene (VAN)	12002481	1.28 x 10E-4 lb/ton fabric	Uncontrolled, one test	52
Woven fabric finishing	226	Tenter frames - resin finish	330001	Trichlorobenzene (VAN)	12002481	0.76 lb/ton fabric	Uncontrolled, based on one test	52
Woven fabric finishing	226	Thermosol dyeing	330001	Trichlorobenzene (VAN)	12002481	0.00136 lb/ton fabric	Uncontrolled, one test	52
Woven fabric finishing	226	Heat setting	330001	Vanadium	7440622	4.2 x 10E-6 lb/ton fabric	Uncontrolled, based on test data	52
Woven fabric finishing	226	Curing oven - resin finish	330001	Zinc	7440666	1.52 x 10E-3 lb/ton fabric	Uncontrolled, average of three tests	52
Woven fabric finishing	226	Heat setting	330001	Zinc	7440666	1.48 x 10E-- lb/ton fabric	Uncontrolled, based on test data	52
Woven fabric finishing	226	Tenter frames - resin finishing	330001	Zinc	7440666	0.00126 lb/ton fabric	Uncontrolled, average of four tests	52
Woven fabric finishing	226	Thermosol dyeing	330001	Zinc	7440666	1.98 x 10E-4 lb/ton fabric	Uncontrolled, average of three tests	52
Xylene (mixed) production, catalytic reformate	2869	Fugitive emissions	30125800	Xylenes (mixed isomers)	1330207	0.06 lb/ton xylene produced	Based on inventory conducted by Texas Air Control Board	13
Xylene (mixed) production, catalytic reformate	2869	Process emissions	30125815	Xylenes (mixed isomers)	1330207	0.06 lb/ton xylene produced	Based on inventory conducted by Texas Air Control Board	13

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Xylene (mixed) production, catalytic reformate	2869	Storage tank emissions	407	Xylenes (mixed isomers)	1330207	0.12 lb/ton xylene produced	Based on inventory conducted by Texas Air Control Board	13
Xylene (mixed) production, coal-derived	2869	Fugitive emissions	30125880	Xylenes (mixed isomers)	1330207	0.30 lb/ton xylene produced	Based on engineering judgement, Hydroscience	13
Xylene (mixed) production, coal-derived	2869	Process emissions	30125815	Xylenes (mixed isomers)	1330207	1.0 lb/ton xylene produced	Based on engineering judgement, Hydroscience	13
Xylene (mixed) production, coal-derived	2869	Storage tank emissions	407	Xylenes (mixed isomers)	1330207	1.2 lb/ton xylene produced	Based on engineering judgement, Hydroscience	13
Xylene (mixed) production, pyrolysis gasoline	2869	Fugitive emissions	30125880	Xylenes (mixed isomers)	1330207	0.04 lb/ton xylene produced	Site visit data	13
Xylene (mixed) production, pyrolysis gasoline	2869	Process emissions	30125815	Xylenes (mixed isomers)	1330207	0.14 lb/ton xylene produced	Site visit data	13
Xylene (mixed) production, pyrolysis gasoline	2869	Storage tank emissions	407	Xylenes (mixed isomers)	1330207	0.60 lb/ton xylene produced	Site visit data	13
Xylene (mixed) production, toluene disproportionation	2865	Fugitive emissions	301250	Toluene	108883	0.1 lb/ton used	Engineering estimate	13
Xylene (mixed) production, toluene disproportionation	2865	Process - general	301250	Toluene	108883	0.1 lb/ton used	Engineering estimate	13
Xylene (mixed) production, toluene disproportionation	2865	Storage	407036	Toluene	108883	0.2 lb/ton used	Engineering estimate	13
Xylene (mixed) production, toluene disproportionation	2869	Fugitive emissions	30125880	Xylenes (mixed isomers)	1330207	0.10 lb/ton xylene produced	Based on engineering judgement, Hydroscience	13
Xylene (mixed) production, toluene disproportionation	2869	Process emissions	30125815	Xylenes (mixed isomers)	1330207	0.10 lb/ton xylene produced	Based on engineering judgement, Hydroscience, Inc.	13
Xylene (mixed) production, toluene disproportionation	2869	Storage tank emissions	407	Xylenes (mixed isomers)	1330207	0.20 lb/ton xylene produced	Based on engineering judgement, Hydroscience, Inc.	13
Xylene isomer production, o-xylene	2869	Fugitive emissions	30125880	Xylenes (mixed isomers)	1330207	0.6 lb/ton o-xylene produced	Engineering judgement, Hydroscience	13

INDUSTRIAL PROCESS	SIC CODE	EMISSION SOURCE	SCC CODE	POLLUTANT	CAS NUMBER	EMISSION FACTOR	NOTES	REFERENCE
Xylene isomer production: o-xylene	2869	Process emissions	301298	Xylenes (mixed isomers)	1330207	3.16 lb/ton o-xylene produced	Engineering Judgement, Hydroscience	13
Xylene isomer production: o-xylene	2869	Storage tank emissions	407	Xylenes (mixed isomers)	1330207	0.24 lb/ton o-xylene produced	Engineering Judgement, Hydroscience	13
Xylene isomer production: o-xylene	2869	Fugitive emissions	30125899	Xylenes (mixed isomers)	1330207	0.76 lb/ton o-xylene produced	From Texas Air Control Board Emissions Survey	13
Xylene isomer production: o-xylene	2869	Process emissions	301298	Xylenes (mixed isomers)	1330207	4.18 lb/ton o-xylene produced	Based on inventory by Texas Air Control Board	13
Xylene isomer production: o-xylene	2869	Storage tank emissions	407	Xylenes (mixed isomers)	1330207	0.16 lb/ton o-xylene produced	From Texas Air Control Board Emissions Survey	13
Xylene isomer production: p-xylene	2869	Fugitive emissions	30125880	Xylenes (mixed isomers)	1330207	0.48 lb/ton p-xylene produced	Based on inventory by Texas Air Control Board	13
Xylene isomer production: p-xylene	2869	Process emissions	30125810	Xylenes (mixed isomers)	1330207	2.28 lb/ton p-xylene produced	Based on inventory by Texas Air Control Board	13
Xylene isomer production: p-xylene	2869	Storage tank emissions	407	Xylenes (mixed isomers)	1330207	0.38 lb/ton p-xylene produced	Based on inventory by Texas Air Control Board	13

REFERENCES

1. Standifer, R. L. and J. A. Key. Report 4, 1,1,1-Trichloroethane and Perchloroethylene, Trichloroethylene, and Vinylidene Chloride (Abbreviated Report). (In) Organic Chemical Manufacturing, Volume 8: Selected Processes, EPA-450/3-80-028c. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1980.

2. Zwiacher, W. E., L. D. Yuhas, J. S. Fakhoury, and J. L. Whittaker. Emissions of Potentially Toxic/Hazardous Air Contaminants in the South Coast Air Basin. South Coast Air Quality Management District, El Monte, California. 1983.

3. Lowenbach, W. A. and J. Schesinger, Lowenbach and Schesinger Associates, Inc. Arsenic: A Preliminary Materials Balance. EPA-560/6-79-005. U. S. Environmental Protection Agency. 1979.

4. Lemmons, T. J., et al. Factors Influencing The Composition and Quantity of Passenger Car Refueling Emissions, Part I. EPA-600/2-86-011. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1986.

5. Soklow, R. Paper Production and Processing - Occupational Exposure and Environmental Release Study. EPA-600/2-84-120. U. S. Environmental Protection Agency. 1984.

6. Daros, B., et al., Accurex Corporation. Emissions and Residue Values from Wast Disposal During Wood Preserving. EPA-600/2-82-062. U. S. Environmental Protection Agency. 1982.

7. Peters, J. A., et al., Monsanto Research Corporation. Source Assessment: Defoliation Of Cotton, State-Of-The-Art. EPA-600/2-77-107g. U. S. Environmental Protection Agency. 1977.

8. Rawlings, G. D., et al., Monsanto Research Corporation. Source Assessment: Cotton Gins. EPA-600/2-78-004a. U. S. Environmental Protection Agency. 1978.

9. Radian Corporation. Hospital Waste Combustion Study Data Gathering Phase (Final Draft Report). Prepared under EPA Contract No. 68-02-3889. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1987.

10. Engineering-Science. Emissions Test Report, Air Toxics Sampling at Wyckoff, Inc., Bainbridge Island, Washington. EPA-910/9-86-149. U. S. Environmental Protection Agency. 1986.

11. Engineering-Science. Emissions Test Report, Air Toxics Sampling at Reichhold Chemical, Tacoma, Washington. EPA-910/9-86-15c. U. S. Environmental Protection Agency. 1986.

12. Balfour, W. D., R. G. Wetherfold, and D. L. Lewis, Radian Corporation. Evaluation of Air Emissions from Hazardous Waste Treatment, Storage and Disposal Facilities. EPA-600/2-85-057. U. S. Environmental Protection Agency. 1984.

13. SAI. Human Exposure to Atmospheric Concentrations of Selected Chemicals, Volume II. Prepared for U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1983.

14. Balentine, H., Radian Corporation. Modeling of Fugitive Phosgene Emissions at Dow Chemical Company, LaPorte, Texas. Prepared for U. S. Environmental Protection Agency. 1986.

15. U. S. Environmental Protection Agency. Source Assessment: Manufacture of Acetone and Phenol from Cumene. EPA-600/2-79-019d. Industrial Environmental Research Laboratory, Research Triangle Park, North Carolina. 1979.

16. Kelso, G. L., R. R. Wilkinson, J. R. Malone, Jr., and T. L. Ferguson, Midwest Research Institute. Development of Information on Pesticides Manufacturing for Source Assessment. EPA-600/2-78-100. U. S. Environmental Protection Agency. 1978.

17. McCurley, W. R., C. M. Moscowitz, J. C. Ochsner, and R. B. Reznik, Monsanto Research Corporation. Source Assessment: Dry Bottom Industrial Boilers Firing Pulverized Bituminous Coal. EPA-600/2-79-019e. U. S. Environmental Protection Agency. 1979.

18. Ondov, J. M., R. C. Ragaini, and A. H. Biermann. Elemental Emissions from a Coal-Fired Power Plant. Comparison of a Venturi Wet Scrubber System with a Cold-Side Electrostatic Precipitator. Environmental Science and Technology. 13(5): 598-607. 1979.

19. Greenburg, R. R., G. E. Gordon, and W. H. Zoller. Composition of Particles Emitted from the Nicosia Municipal Incinerator. Environmental Science and Technology. 12(12): 1329-1332. 1978.

20. Greenburg, R. R., G. E. Gordon, and W. H. Zoller. Atmospheric Emissions of Elements on Particles from the Parkway Sewage-Sludge Incinerator. Environmental Science and Technology. 15(1): 64-70. 1981.

21. Golembiewski, M., K. Ananth, G. Trischan, and E. Baladi, Midwest Research Institute. Environmental Assessment of Waste-To-Energy Process, Braintree Municipal Incinerator, Braintree, Massachusetts. Prepared under EPA Contract No. 68-02-2166. U. S. Environmental Protection Agency. 1978.

22. Falgout, D. A., Engineering Science. Environmental Release of Asbestos from Commercial Product Shaping. EPA-600/2-85-044. U. S. Environmental Protection Agency. 1985.

23. U. S. Environmental Protection Agency. Source Assessment: Pressed and Blown Glass Manufacturing Plants. EPA-600/2-77-005. Industrial Environmental Research Laboratory, Research Triangle Park, North Carolina. 1977.

24. Hume, G. Propylene Oxide: Preliminary Source Assessment. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1986.

25. U. S. Environmental Protection Agency. Atmospheric Emissions from Chlor-Alkali Manufacture. Air Pollution Control Office, Research Triangle Park, North Carolina. 1971.

26. U. S. Environmental Protection Agency. Standard Support and Environmental Impact Statement: Emission Standard for Vinyl Chloride. EPA-450/2-75-009. Office of Air and Waste Management, and Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. 1975.

27. TRW, Inc. Vinyl Chloride - A Review of National Emission Standards. EPA-450/3-82-003. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1982.

28. U. S. Environmental Protection Agency. Inorganic Arsenic Emissions from Glass Manufacturing Plants - Background Information for Proposed Standards. EPA-450/3-83-011a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. 1983.

29. U. S. Environmental Protection Agency. Coke Oven Emissions from Wet-Coal Charged By-Product Coke Oven Batteries - Background Information for Proposed Standards. EPA-450/4-83-028a. Office of Air and Radiation, and Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. 1985.

30. Rives, G. D. and A. J. Miles, Radian Corporation. Control of Arsenic Emissions from the Secondary Lead Smelting Industry - Technical Document. Prepared under EPA Contract No. 68-02-3816. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1985.

31. U. S. Environmental Protection Agency. Inorganic Arsenic Emissions from Primary Copper Smelters and Arsenic Plants - Background Information for Promulgated Standards. EPA-450/3-83-010b. Office of Air and Radiation, and Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. 1986.

32. Radian Corporation. Preliminary Study of Sources of Inorganic Arsenic. EPA-450/5-82-005. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1982.

33. Archer, S. R. and T. R. Blackwood, Monsanto Research Corporation. Status Assessment of Toxic Chemicals: Asbestos. EPA-600/2-79-210c. U. S. Environmental Protection Agency. 1979.

34. U. S. Department of Health, Education, and Welfare. Atmospheric Emissions from Hydrochloric Acid Manufacturing Processes. Cooperative Study Project. Manufacturing Chemists' Association and Public Health Service, Durham, North Carolina. 1969.

35. U. S. Environmental Protection Agency. Radiological Impact Caused by Emissions of Radionuclides into Air in The United States, Preliminary Report. EPA-520/7-79-006. Office of Radiation Programs, Washington, D. C. 1979.

36. Mead, R. C., B. K. Post, and G. W. Brooks, Radian Corporation. Summary of Trace Emissions from and Recommendations of Risk Assessment Methodologies for Coal and Oil Combustion Sources (Final Report). Prepared under EPA Contract No. 68-02-3889. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1986.

37. U. S. Environmental Protection Agency. Background Information Document, Proposed Standards for Radionuclides, Draft. EPA-520/1-83-001. Office of Radiation Programs, Washington, D. C. 1983.

38. Coleman, R., J. Lent, E. Coffey, and P. Siebert, Energy and Environmental Analysis, Inc. Sources of Atmospheric Cadmium. Prepared for U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1979.

39. U. S. Environmental Protection Agency. Radionuclides - Background Information Document for Final Rules, Volume II. EPA-520/1-84-022. Office of Radiation Programs, Washington, D. C. 1984.

40. U. S. Environmental Protection Agency. Preliminary Source Assessment for Mercuric Chloride. Research Triangle Park, North Carolina. November 1987.

41. U. S. Environmental Protection Agency. Status Assessment of Toxic Chemicals - Cadmium. EPA-600/2-79-210f. Industrial Environmental Research Laboratory, Cincinnati, Ohio. 1979.

42. Pope, A. Preliminary Compilation of Air Pollutant Emission Factors for Selected Air Toxic Compounds. EPA-450/4-86-010a. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1987.

43. U. S. Environmental Protection Agency. Cadmium Emissions from Cadmium Refining and Primary Zinc/Zinc Oxide Smelting - Phase I Technical Report. EPA-450/3-87-011. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. 1987.

44. Radian Corporation. Background Information Document For Cadmium Emission Sources, Final Report. Prepared under EPA Contract No. 68-02-3818. U. S. Environmental Protection Agency. Research Triangle Park, North Carolina. 1985.

45. Jacko, R. B. and D. W. Neuendorf. Trace Metal Particulate Emission Test Results from a Number of Industrial and Municipal Point Sources. Journal of the Air Pollution Control Association. 27(10): 989-994. 1977.

46. Keller, L. E. and A. J. Miles, Radian Corporation. Cadmium Source Assessment Plant Visits: Nonconfidential Trip Reports Primary Metals Smelting Industries. Prepared for U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1985.

47. U. S. Environmental Protection Agency. Environmental Assessment of Iron Casting. EPA-600/2-80-021. Industrial Environmental Research Laboratory, Research Triangle Park, North Carolina. 1980.

48. U. S. Environmental Protection Agency. Locating and Estimating Air Emissions from Sources of Chlorobenzenes. EPA-450/4-84-007m. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. 1987.

49. Brooks, G. W. and G. E. Hunt, Radian Corporation. Source Assessment for Hexachlorobenzene (Final Report). Prepared under EPA Contract Number 68-02-3818. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1984.

50. U. S. Environmental Protection Agency. Evaluation of Air Pollution Regulatory Strategies for Gasoline Marketing Industry. EPA-450/3-84-012a. Office of Air and Radiation, Washington, D. C. 1984.

51. U. S. Environmental Protection Agency. Locating and Estimating Air Emissions from Sources of Ethylene Dichloride. EPA-450/4-84-007d. Office of Air Quality and Planning Standards, Research Triangle Park, North Carolina. 1984.

52. McCurley, W. D., et al., Monsanto Research Corporation. Source Assessment: Cotton and Synthetic Woven Fabric Finishing (Final Report, March 1977 - January 1980). EPA-600/2-80-042a. U. S. Environmental Protection Agency. 1980.

53. Weant, G. E., Engineering Science. Sources of Copper Air Emissions. EPA-600/2-85-046. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1985.

54. Krishnan, R. E. and G. V. Helwig. Trace Emissions from Coal and Oil Combustion. Environmental Progress. 1(4): 290-295. 1982.

55. U. S. Environmental Protection Agency. A Risk Assessment of Waste Oil Burning in Boilers and Space Heaters. EPA-530/SW-84-011. Office of Solid Waste, Washington, D. C. 1984.

56. Davis, W. E. and Associates. National Inventory of Sources and Emissions: Vanadium - 1968. APTD-1511. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1971.

57. Alfheim, I. and T. Ramdahl. Environmental Impact of Residential Wood Heating in Scandinavia. Presented at the 77th Annual Meeting of the Air Pollution Control Association, San Francisco, California, June 24-29, 1984.

58. DeAngelis, D. G., D. S. Ruffin, J. A. Peters, and R. B. Reznik, Monsanto Research Corporation. Source Assessment: Residential Combustion of Wood. EPA-600/2-80-042b. U. S. Environmental Protection Agency. 1980.

59. White, T. S., Radian Corporation. Volatile Organic Compounds Emissions from Hazardous Waste Treatment Facilities at Downstream POTW (Final Report). Prepared under EPA Contract No. 68-02-4378. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1987.

60. Smith, A. M., Radian Corporation. Volatile Organic Compounds Emissions from Solvent Recycling Facilities at Downstream POTW (Final Report). Prepared under EPA Contract No. 68-02-4378. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1987.

61. Stockton, M. B., Radian Corporation. Volatile Organic Compounds Emissions from the Petroleum Refining Industry at Downstream POTW (Final Report). Prepared under EPA Contract No. 68-02-4378. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1987.

62. Dylewski, S. W. Report 5, Crude Terephthalic Acid, Dimethyl Terephthalate, and Purified Terephthalic [SIC] Acid. (In) Organic Chemical Manufacturing, Volume 7: Selected Processes, EPA-450/3-80-028b. U. S. Environmental Protection Agency. 1981.

63. U. S. Environmental Protection Agency. Locating and Estimating Air Emissions from Sources of Ethylene Oxide. EPA-450/4-84-0071. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. 1987.

64. Honrath, R. E., J. Steger, R. Jongleux, and W. R. Oliver, Radian Corporation. Air Toxics Emission Factor Development Project, Final Report, Volume I: Ethylene Oxide Emissions from Sterilization and Fumigation Operations. Radian Document No. 87-243-081-03. Prepared for Bay Area Air Quality Management District, San Francisco, California. 1987.

65. Marshall, J. Ethyl Chloride, Preliminary Source Assessment (Draft Report). U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1987.

66. U. S. Environmental Protection Agency. Zinc/Zinc Oxide, Preliminary Source Assessment. EPA-450/3-87-008. Office of Air and Radiation, and Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. 1987.

67. Meardon, K., Pacific Environmental Services, Inc. Preliminary Source Assessment for Xylene (Final Report). Prepared under EPA Contract No. 68-02-3887, Task No. 43. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1986.

68. U. S. Environmental Protection Agency. Surveys of Perchloroethylene Emission Sources. EPA-450/3-85-017. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. 1985.

69. U. S. Environmental Protection Agency. Survey of Methylene Chloride Emission Sources. EPA-450/3-85-015. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. 1985.

70. Hobbs, F. D. and C. W. Stuewe. Report 2, Carbon Tetrachloride and Perchloroethylene by the Hydrocarbon Chlorinolysis Process (Abbreviated Report). (In) Organic Chemical Manufacturing, Volume 8: Selected Processes, EPA-450/3-80-028c. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1980.

71. Hobbs, F. D. and C. W. Stuewe. Report 5, Chloromethanes by Methane Chlorination Process. (In) Organic Chemical Manufacturing, Volume 8: Selected Processes, EPA-450/3-80-028c. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1980.

72. Hobbs, F. D. and C. W. Stuewe. Report 6, Chloromethanes Manufactured by Methanol Hydrochlorination and Methyl Chloride Chlorination Processes. (In) Organic Chemical Manufacturing, Volume 8: Selected Processes, EPA-450/3-80-028c. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1980.

73. Memorandum from R. Pandullo and R. Nash, Radian Corporation, to Methylene Chloride File, April 28, 1986. Estimate of Methylene Chloride Emissions from Polyurethane Foam Slabstock Facilities and Emission Reductions Achievable with Additional Controls.

74. Memorandum from J. Martines, R. Wassel, and G. Bockol, Radian Corporation, to File of Aerosol Manufacturing - Packagers, Formulators, and Users Work Assignment, October 13, 1987. Emission Estimates and Controls Memorandum for Emissions from those Aerosol Packaging Facilities Responding to Section 114 Questionnaires.

75. Memorandum from E. Moretti, Radian Corporation, to Aerosol Packagers Project File, January 19, 1988. Documentation of Baseline and Controlled Emission Parameters for Aerosol Packagers.

76. Memorandum from R. C. Mead, Radian Corporation, to D. A. Beck, U. S. Environmental Protection Agency, September 3, 1987. Documentation of Emissions and Long-Term Exposure Model Inputs for the Organic Solvent Cleaning Source Category.

77. Memorandum from E. Epner, Radian Corporation, to Xylenes Projects File, July 13, 1987. Additional Preliminary Source Information on End Product Solvent Use of Xylene.

78. Memorandum from E. Epner, Radian Corporation, to L. B. Evans, U. S. Environmental Protection Agency, December 23, 1985. Estimates of 1,3-Butadiene Emissions from Neoprene Facilities and Emissions Reductions Achievable with Additional Controls.

79. Memorandum from K. Q. Kuhn and R. A. Wassel, Radian Corporation, to Butadiene Source Category Concurrence File, March 25, 1986. Estimates of 1,3-Butadiene Emissions from Production Facilities and Emissions Reductions Achievable with Additional Controls.

80. Memorandum from E. Epner, Radian Corporation, to Butadiene Source Category File, March 27, 1986. Estimates of 1,3-Butadiene Emissions from Polybutadiene Facilities and Emissions Reductions Achievable with Additional Controls.

81. Chi, C. T., T. W. Hughes, T. E. Ctvrtnicek, D. A. Horn, and R. W. Serth, Monsanto Research Corporation. Source Assessment: Rubber Processing, State-Of-The-Art. EPA-600/2-78-004j. U. S. Environmental Protection Agency. 1978.

82. Memorandum from R. L. Ajax, U. S. Environmental Protection Agency, to S. R. Wyatt and J. R. Farmer, U. S. Environmental Protection Agency, November 25, 1986. Information Memorandum - Butadiene Emissions from Facilities in the Miscellaneous Source Category.

83. Memorandum from K. Q. Kuhn, Radian Corporation, to L. B. Evans, U. S. Environmental Protection Agency, April 9, 1986. Final SBR Emissions and Controls Memorandum.

84. Memorandum from G. Hume, U. S. Environmental Protection Agency, to A. Pope, U. S. Environmental Protection Agency, April 10, 1987. Propylene-HEM Inputs and Source Category Descriptions.

85. Hume, G. Propylene Emissions from Acrylonitrile Production. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1987.

86. Hume, G. Propylene Emissions from Propylene Oxide Production. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1986.

87. Hume, G. Propylene Emissions from the Manufacture of Isopropyl Alcohol. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1986.

88. Hume, G. Propylene Emissions from Cumene Production. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1986.

89. Hume, G. Propylene Emissions from the Manufacture of Oxo Chemicals. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1986.

90. Hume, G. Propylene Emissions from the Manufacture of Acrylic Acid. U. S. Environmental Protection Agency. Research Triangle Park, North Carolina. 1986.

91. State of Washington, Department of Ecology. Source Test Report: 85-14, Kaiser Aluminum and Chemical Corporation. Tacoma, Washington. 1985.

92. Dickson, R. J., S. H. Peoples, and W. R. Oliver, Radian Corporation. Air Toxics Technical Assistance for the State of Alaska, Final Report. Prepared for U. S. Environmental Protection Agency, Region X, Seattle, Washington. March 1987.

93. Hill, S., J. Tomich, T. Smith, and E. Wilner. Toxic Air Pollutant Emission Inventory for the San Francisco Bay area, Progress Report. Bay Area Air Quality Management Division, Toxic Evaluation Section, San Francisco, California. June 1987.

94. Peoples, S., C. Thurn, and R. Kapahi, Radian Corporation. Washington Toxic Air Contaminants Study, Final Report. Prepared for Washington State Department of Ecology. 1984.

95. Khan, Z. S. and T. W. Hughes. Source Assessment: Chlorinated Hydrocarbons Manufacture. EPA-600/2-79-019g. U. S. Environmental Protection Agency, Washington, D. C. 1979.

96. Memorandum from A. Smith, U. S. Environmental Protection Agency, to C. Most, Radian Corporation, October 10, 1987. Styrene Emissions.

97. U. S. Environmental Protection Agency. Compilation of Air Pollutant Emission Factors - 4th Edition, Volume I, Stationary Point and Area Sources. AP-42. Office of Air and Radiation, and Office of Mobile Sources. 1985.

98. Law, S. L. and G. E. Gordon. Sources Of Metals In Municipal Incinerator Emissions. Environmental Science and Technology. 13(4): 432-437. 1979.

99. U. S. Environmental Protection Agency. Summary of Emissions Associated with Sources of Naphthalene. EPA-450/3-88-003. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. 1986.

100. U. S. Environmental Protection Agency. National Emission Standards for Asbestos - Background Information for Proposed Standards, Draft. Emissions Standards and Engineering Division, Research Triangle Park, North Carolina. March 1987.

101. Rives, G., Radian Corporation. Summary of Emissions Data for Sewage Sludge Incinerators. Prepared for U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1988.

102. Memorandum from R. C. Mead and R. F. Pandullo, Radian Corporation, and D. A. Beck, U. S. Environmental Protection Agency, to Degreasing NESHAP File, September 8, 1987. Calculation of Number of Organic Solvent Cleaners and Solvent Emissions and Use Per Model Plant.

103. Darling, C., R. Allen, and G. Brenniman. Air Pollution Emissions from a Hospital Incinerator. In: VIth - World Congress on Air Quality, Volume II, Paris, France. May 1983.

104. Standifer, R. L. and J. A. Key. Report 4, 1,1,1-Trichloroethane and Perchloroethylene, Trichloroethylene and Vinylidene Chloride (Abbreviated Report). (In) Organic Chemical Manufacturing, Volume 8: Selected Processes, EPA-450/3-80-028c. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. October 1980.

105. Pandullo, R. F., S. A. Shareef, L. E. Kincaid, and P. V. Murphy, Radian Corporation. Survey of Trichloroethylene Emission Sources. EPA-450/3-85-021. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1985.

106. U. S. Environmental Protection Agency. Locating and Estimating Air Emissions from Sources of Formaldehyde. EPA-450/4-84-007e. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. March 1984.

107. U. S. Environmental Protection Agency. Locating and Estimating Air Emissions from Sources of Manganese. EPA-450/4-84-007h. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. September 1986.

108. White, T. S., Radian Corporation. Volatile Organic Compounds Emissions from Rubber Processing Facilities at Downstream POTW, Final Report. Prepared under EPA Contract No. 68-02-4378. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1987.

109. Radian Corporation. Locating and Estimating Air Emissions from Sources of Epichlorohydrin. EPA-450/4-84-007j. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. August 1986.

110. Radian Corporation. Locating and Estimating Air Emissions from Sources of Nickel. EPA-450/4-84-007f. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. March 1984.

111. Bureau of Air Management, Wisconsin Department of Natural Resources. Mercury Emissions to the Atmosphere in Wisconsin. PUBL-AM-014. June 1986.

112. U. S. Environmental Protection Agency. Review of National Emission Standards for Mercury. EPA-450/3-84-014. Emissions Standards and Engineering Division, Research Triangle Park, North Carolina. March 1984.

113. Anderson, D., Emission Factors for Trace Substances. EPA-450/2-72-001. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. December 1973.

114. Brooks, G. W., M. B. Stockton, K. Kuhn, and G. D. Rives, Radian Corporation. Locating and Estimating Air Emissions from Sources of Polycyclic Organic Matter (POM). EPA-450/4-84-007p. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. May 1988.

115. U. S. Environmental Protection Agency. National Dioxin Study: Report to Congress. EPA-530/SW-87-025. Office of Solid Waste and Emergency Response, Washington, D. C. August 1987.

116. Brooks, G. W., Radian Corporation. Summary of a Literature Search to Develop Information on Sources of Chlorinated Dioxin and Furan Air Emissions (Final Report). Prepared under EPA Contract No. 68-02-3513. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. October 1983.

117. Office of Solid Waste and Emergency Response. Municipal Waste Combustion Study: Report To Congress. EPA-530/SW-87-021a. U. S. Environmental Protection Agency, Washington, D. C. June 1987.

118. Office of Solid Waste and Emergency Response. Municipal Waste Combustion Study: Emission Data Base for Municipal Waste Combustors. EPA-530/SW-87-021b. U. S. Environmental Protection Agency, Washington, D. C. June 1987.

119. Keating, M. H., Radian Corporation. Literature Review, National Dioxin Study, Tier 4: Combustion Sources. EPA-450/4-84-014i. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. June 1986.

120. Serth, R. W. and T. W. Hughes. Source Assessment: Phthalic Anhydride (Air Emissions). EPA-600/2-76-032d. Washington, D. C. 1976.

121. U. S. Environmental Protection Agency. Locating and Estimating Air Emissions from Sources of Phosgene. EPA-450/4-84-007i. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. 1986.

122. Maxwell, C. M. and D. W. Nelson. A Lead Emission Factor for Reentrained Dust from a Paved Roadway. EPA-450/3-78-021. U. S. Environmental Protection Agency. Research Triangle Park, North Carolina. 1978.

123. Horn, D. A., D. R. Tierney, and T. W. Hughes. Source Assessment: Polychloroprene, State-Of-The-Art. EPA-600/2-77-107o. U. S. Environmental Protection Agency. Cincinnati, Ohio. 1977.

124. Moscowitz, C. M., Monsanto Research Corporation. Source Assessment: Charcoal Manufacturing, State-Of-The-Art. Prepared under EPA Contract No. 68-02-1874. U. S. Environmental Protection Agency. 1979.

125. Delaney, J. L. and T. W. Hughes. Source Assessment: Manufacture of Acetone and Phenol from Cumene. EPA-600/2-79-019d. U. S. Environmental Protection Agency, Cincinnati, Ohio. 1979.

126. U. S. Environmental Protection Agency. Summary of Emissions Associated with Source of Naphthalene. EPA-450/3-88-003. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. 1986.

127. Tierney, D. R., T. R. Blackwood, and G. E. Wilkins. Status Assessment of Toxic Chemicals. Acrylonitrile. EPA-600/2-79-210a. U. S. Environmental Protection Agency, Cincinnati, Ohio. 1979.

128. DeAngelis, D. G. and R. B. Reznik. Source Assessment: Residential Combustion of Coal. EPA-600/2-79-019a. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1979.

129. U. S. Environmental Protection Agency. Ammonium Sulfate Manufacture - Background Information for Proposed Emission Standards. EPA-450/3-79-034a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. 1979.

130. Midwest Research Institute. Source Assessment of Acetaldehyde Emissions, Final Report. Prepared under EPA Contract No. 68-02-3817. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1987.

131. Midwest Research Institute. Technical Report for the Phase I Study of Cadmium Emissions from Primary Lead and Copper Smelters. Prepared under EPA Contract No. 68-02-3817. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1986.

132. U. S. Environmental Protection Agency. Locating and Estimating Air Emissions from Sources of Benzene. EPA-450/4-84-007q. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. 1988.

133. Johnston, M. G. Preliminary Source Assessment for Chloride, Final Report. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1986.

134. Howle, R. H., S. A. Shareef, and J. A. Kowalski, Radian Corporation. Survey of Carbon Tetrachloride Emission Sources. EPA-450/3-85-018. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1985.

135. Honrath, R. E. and W. R. Oliver, Radian Corporation. Air Toxics Emission Factor Development Project, Final Report. Volume II, Air Toxics Emissions from Chrome Plating Operations and Combustion of Used Oil - and Used Solvent- Derived Fuels. Prepared for Bay Area Air Quality Management District, San Francisco, California. 1987.

136. Chalekode, P. K. and T. R. Blackwood. Source Assessment: Coal Refuse Piles, Abandoned Mines and Outcrops, State-Of-The-Art. EPA-600/2-78-004v. U. S. Environmental Protection Agency, Cincinnati, Ohio. 1978.

137. Search, W. J. and R. B. Reznik. Source Assessment: Urea Manufacture. EPA-600/2-77-107l. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1977.

138. Khan, Z. S. and T. W. Hughes. Source Assessment: Polyvinyl Chloride. EPA-600/2-78-004i. U. S. Environmental Protection Agency, Cincinnati, Ohio. 1978.

139. Earley, D. E., K. M. Tackett, and T. R. Blackwood. Source Assessment: Rail Tank, and Drum Cleaning, State-Of-The-Art. EPA-600/2-78-004g. U. S. Environmental Protection Agency, Cincinnati, Ohio. 1978.

140. Midwest Research Institute. Source Assessment of Acrolein Emissions, Final Report. Prepared under EPA Contract No. 68-02-3817. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1987.

141. U. S. Environmental Protection Agency. Urea Manufacturing Industry, Technical Document. EPA-450/3-81-001. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. 1981.

142. Schomer, T. L. Report 9, Glycol Ethers. (In) Organic Chemical Manufacturing, Volume 9: Selected Processes, EPA-450/3-80-028d. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1980.

143. Lovell, R. J. Report 6, Acetaldehyde. (In) Organic Chemical Manufacturing, Volume 9: Selected Processes, EPA-450/3-80-28d. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1980.

144. Waste Lube Oils Pose Disposal Dilemma. Environmental Science and Technology. 6(1): 25-26. 1972.

145. Basdekis, H. S. Report 6, Caprolactam. (In) Organic Chemical Manufacturing, Volume 6: Selected Processes, EPA-450/3-80-028a. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1980.

146. Blackburn, J. W. Report 1, Cyclohexane. (In) Organic Chemical Manufacturing, Volume 6: Selected Processes, EPA-450/3-80-028a. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1980.

147. Radian Corporation. Phoenix and Tuscon Air Toxics Emission Inventory Study, Final Report. Prepared under EPA Contract No. 68-02-3988, Work Assignment No. 91. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. April 1987.

148. Barrett, K. W. and A. Goldfarb, Mitre Corporation. A Review of Standards of Performance for New Stationary Sources - Petroleum Refineries. EPA-450/3-79-008. U. S. Environmental Protection Agency. January 1979.

149. Key, J. A. and F. D. Hobbs. Report 2, Acrylonitrile. (In) Organic Chemical Manufacturing, Volume 10: Selected Processes, EPA-450/3-80-028e. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1980.

150. Peterson, C. A. Report 3, Glycerin and its Intermediates (Allyl Chloride, Epichlorohydrin, Acrolein, and Allyl Alcohol). (In) Organic Chemical Manufacturing, Volume 10: Selected Processes, EPA-450/3-80-028e. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1980.

151. Blackburn, J. W. Report 4, Acrylic Acid and Esters. (In) Organic Chemical Manufacturing, Volume 10: Selected Processes, EPA-450/3-80-028e. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1980.

152. Helsel, R. W. Report 8, Acetic Anhydride. (In) Organic Chemical Manufacturing, Volume 10: Selected Processes, EPA-450/3-80-028e. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1980.

153. Pitts, D. A. Report 4, Toluene Diisocyanate. (In) Organic Chemical Manufacturing, Volume 7: Selected Processes, EPA-450/3-80-028b. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1980.

154. Pitts, D. A. Report 3, Fluorocarbons (Abbreviated Report). (In) Organic Chemical Manufacturing, Volume 8: Selected Processes, EPA-450/3-80-028c. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. 1980.

155. Gerstle, R. W. and D. N. Albrinck. Atmospheric Emissions of Metals from Sewage Sludge Incineration. Journal of the Air Pollution Control Association. 32(11): 1119-1123. 1982.

156. Draft memorandum from E. Moretti, Radian Corporation, to Perchloroethylene Dry Cleaning File, March 25, 1988. Documentation of Emission Factors for the Perchloroethylene Dry Cleaning Industry.

157. Personal Communication. C. Most, Radian Corporation, 1988. Paint Stripping Project File.

158. U. S. Environmental Protection Agency. Sodium Hydroxide Preliminary Source Assessment. EPA-450/3-88-002. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. 1988.

159. Davis, W. E. and Associates. National Inventory of Sources and Emissions: Zinc - 1969. Prepared under EPA Contract No. 68-02-0100. U. S. Environmental Protection Agency. May 1972.

160. U. S. Environmental Protection Agency. Survey of Chloroform Emission Sources. EPA-450/3-85-026. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. 1985.

161. U. S. Environmental Protection Agency. Locating and Estimating Air Emissions from Sources of Chromium. EPA-450/4-84-007g. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. 1985.

162. U. S. Environmental Protection Agency. Locating and Estimating Air Emissions from Sources of Acrylonitrile. EPA-450/4-84-007a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. December 1984.

163. U. S. Environmental Protection Agency. Locating and Estimating Air Emissions from Sources of Carbon Tetrachloride. EPA-450/4-84-007b. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. March 1984.

164. U. S. Environmental Protection Agency. Locating and Estimating Air Emissions from Sources of Chloroform. EPA-450/4-84-007c. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. March 1984.

165. U. S. Environmental Protection Agency. Locating and Estimating Air Emissions from Sources of Vinylidene Chloride. EPA-450/4-84-007k. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. September 1986.

166. U. S. Environmental Protection Agency. Locating and Estimating Air Emissions from Sources of 1,3-Butadiene. EPA-450/2-89-021. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. December 1989.

167. U. S. Environmental Protection Agency. Hospital Waste Combustion Study: Data Gathering Phase. EPA-450/3-88-017. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. December 1988.

168. U. S. Environmental Protection Agency. Review of National Emission Standards for Mercury. EPA-450/3-84-014. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. December 1984.

169. U. S. Environmental Protection Agency. A Review of Standards of Performance for New Stationary Sources - Ferroalloy Production Facilities. EPA-450/3-80-041. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. December 1980.

170. U. S. Environmental Protection Agency. Second Review of New Source Performance Standards for Asphalt Concrete Plants. EPA-450/3-85-024. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. October 1984.

171. U. S. Environmental Protection Agency. Benzene Emissions from Coke By-Product Recovery Plants - Background Information for Revised Proposed Standards. EPA-450/3-83-016b. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. October 1988.

172. U. S. Environmental Protection Agency. Benzene Fugitive Emissions - Background Information for Proposed Standards. EPA-450/3-80-032a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. November 1980.

173. U. S. Environmental Protection Agency. Wool Fiberglass Insulation Manufacturing Industry - Background Information for Proposed Standards. EPA-450/3-83-022a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. December 1983.

174. U. S. Environmental Protection Agency. Background Information for Standards of Performance: Phosphate Fertilizer Industry, Volume I: Proposed Standards. EPA-450/2-74-019a. Office of Air and Waste Management, Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. October 1974.

175. U. S. Environmental Protection Agency. Final Guideline Document: Control of Sulfuric Acid Mist Emissions from Existing Sulfuric Acid Production Units. EPA-450/2-77-019. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. June 1977.

176. U. S. Environmental Protection Agency. ORD Project Summary, Environmental Assessment of a Wood-Waste-Fired Industrial Firetube Boiler; R. D. DeRosier and L. R. Waterland, EPA-600/S7-87/010. AEERL, Research Triangle Park, North Carolina. May 1987.

177. U. S. Environmental Protection Agency. ORD Project Summary, Environmental Assessment of a Wood-Waste-Fired Industrial Watertube Boiler. EPA-600/S7-87/012. AEERL, Research Triangle Park, North Carolina. Mary 1987.

178. U. S. Environmental Protection Agency. ORD Project Summary, Kraft Pulp Industry Particulate Emissions: Source Category Report. Henry Modetz and Michael Murtiff. EPA-600/S7-87/006. AEERL, North Carolina. May 1987.

179. U. S. Environmental Protection Agency. ORD Project Summary: Ammonia Emission Factors for the NAPAP Emission Inventory. EPA-600/S7-87/001. AEERL, Research Triangle Park, North Carolina. April 1987.

180. U. S. Environmental Protection Agency. Locating and Estimating Air Toxics Emissions from Municipal Waste Combustors. EPA-450/2-89/006. Radian Corporation, Research Triangle Park, North Carolina. April 1989.

181. U. S. Environmental Protection Agency. Project Summary Hydrogen Chloride and Hydrogen Fluoride Emission Factors for the NAPAP Emission Inventory. EPA-600/S7-85/041. AEERL, Research Triangle Park, North Carolina. January 1986.

182. U. S. Environmental Protection Agency. Benzene Emissions from Maleic Anhydride Industry - Background Information for Proposed Standards. EPA-450/3-80-001a. Research Triangle Park, North Carolina. February 1980.

183. U. S. Environmental Protection Agency. Source Category Survey: Refractory Industry. EPA-450/3-80-006. Research Triangle Park, North Carolina. March 1980.

184. U. S. Environmental Protection Agency. Electric Arc Furnaces in Ferrous Foundries - Background Information for Proposed Standards. EPA-450/3-80-020a. Research Triangle Park, North Carolina. May 1980.

185. Barrett, K. and A. Goldfarb (Mitre Corp.). A Review of Standards of Performance for New Stationary Sources - Petroleum Refineries. EPA-450/3-79-008. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. March 1979.

186. U. S. Environmental Protection Agency. Source Category Survey: Animal Feed Defluorination Industry. EPA-450/3-80-015. Research Triangle Park, North Carolina. June 1978.

187. U. S. Environmental Protection Agency. Source Category Survey: Mineral Wool Manufacturing Industry. EPA-450/3-80-016. Research Triangle Park, North Carolina. March 1980.

188. U. S. Environmental Protection Agency. Bulk Gasoline Terminals - Background Information for Promulgated Standards. EPA-450/3-80-038b. Research Triangle Park, North Carolina. August 1983.

189. U. S. Environmental Protection Agency. Fossil Fuel Fired Industrial Boilers - Background Information, Volume 1: Chapters 1-9. EPA-450/3-82-006a. Research Triangle Park, North Carolina. March 1982.

190. U. S. Environmental Protection Agency. Review of New Source Performance Standards for Phosphate Fertilizer Industry - Revised. EPA-450/3-79-038R. Research Triangle Park, North Carolina. November 1980.

191. U. S. Environmental Protection Agency. Glass Manufacturing Plants - Background Information: Proposed Standards of Performance. EPA-450/3-79-005a. Research Triangle Park, North Carolina. June 1979.

192. U. S. Environmental Protection Agency. Phosphate Rock Plants - Background Information for Proposed Standards. EPA-450/3-79-017. Research Triangle Park, North Carolina. September 1979.

193. U. S. Environmental Protection Agency. Lead-Acid Battery Manufacture - Background Information for Proposed Standards. EPA-450/3-79-028a. Research Triangle Park, North Carolina. November 1979.

194. U. S. Environmental Protection Agency. Standards Support and Environmental Impact Statement, Volume 1: Proposed Standards of Performance for Petroleum Refinery Sulfur Recovery Plants. EPA-450/2-76-016a. Research Triangle Park, North Carolina. September 1976.

195. U. S. Environmental Protection Agency. Background Information for Standards of Performance: Phosphate Fertilizer Industry, Volume 2: Test Data Summary. EPA-450/2-74-019b. Research Triangle Park, North Carolina. October 1974.

196. U. S. Environmental Protection Agency. Background Information for Standards of Performance: Electric Arc Furnaces, Volume 1: Proposed Standards. EPA-450/2-74-017a. Research Triangle Park, North Carolina. October 1974.

197. U. S. Environmental Protection Agency. Background Information on National Emission Standards for Hazardous Air Pollutants - Proposed Amendments to Standard for Asbestos and Mercury. EPA-450/2-74-009a. Research Triangle Park, North Carolina. October 1974.

198. U. S. Environmental Protection Agency. Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels in the Steel Industry - Background Information for Proposed Revisions to Standards. EPA-450/3-82-020a. Research Triangle Park, North Carolina. July 1983.

199. U. S. Environmental Protection Agency. Background Information for Porposed New Source Performance Standards: Asphalt Concrete Plants, Petroleum Refineries, Storage Vessels, Secondary Lead Smelters and Refineries, Brass or Bronze Ingot Production Plants, Iron and Steel Plants, Sewage Treatment Plants. Volume 2, Appendix: Summaries of Test Data. APTD-1352b. Research Triangle Park, North Carolina. June 1973.

200. Drabkin, M. and K.J. Brooks. A Review of Standards of Performance for New Stationary Sources-Sulfuric Acid Plants. EPA-450/3-79-003. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. January 1979.

201. U. S. Environmental Protection Agency. Review of New Source Performance Standards for Sulfuric Acid Plants. EPA-450/3-85-012. Research Triangle Park, North Carolina. March 1985.

202. U. S. Environmental Protection Agency. Benzene Storage Tanks - Background Information for Proposal to Withdraw Proposed Standards. Preliminary Draft. EPA-450/3-84-004. Research Triangle Park, North Carolina. February 1984.

203. U. S. Environmental Protection Agency. Second Review of Standards of Performance for Sewage Sludge Incinerators. EPA-450/3-84-010. Research Triangle Park, North Carolina. March 1984.

204. U. S. Environmental Protection Agency. Inorganic Arsenic Emissions from High-Arsenic Primary Copper Smelters - Background Information for Proposed Standards. EPA-450/3-83-009a. Research Triangle Park, North Carolina. April 1983.

205. Elliott, J. and S. Watkins, Radian Corporation. Industrial Wastewater Volatile Organic Compound Emissions - Background Information for BACT/LAER Determinations. EPA-450/3-90-004. Control Technology Center, U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. January 1990.

206. Hester, C. 1989. Letter from Midwest Research Institute, Cary, North Carolina, to D. Michelitsch, U. S. Environmental Protection Agency, Research Triangle Park, North Carolina, (May 5).

207. Stelling, J.H., and K.L. Wertz, 1987. Memorandum from Radian Corporation, Research Triangle Park, North Carolina, to L.B. Evans, U. S. Environmental Protection Agency, Research Triangle Park, North Carolina (July 17).

208. Locating and Estimating Air Emissions from Sources of Perchloroethylene and Trichloroethylene. EPA-450/2-89-013. U. S. Environmental Protection Agency, OAQPS, Research Triangle Park, North Carolina. August 1989.

209. Locating and Estimating Air Emissions from Sources of Chromium (Supplement). EPA-450/2-89-002. U. S. Environmental Protection Agency, OAQPS, Research Triangle Park, North Carolina. August 1989.

210. Chemical and Biological Characterization of Products of Incomplete Combustion from the simulated Field Burning of Agricultural Plastic. Control Technology Center. Research Triangle Park, North Carolina. February 1989.

211. Evaluation of Emission Factors for Formaldehyde from Certain Wood Processing Operations. EPA-450/3-87-023. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. October 1987.

212. Characterization of Emissions from the Simulated Open Burning of Scrap Tires. EPA-600/2-89-054. U. S. Environmental Protection Agency, CTC, Research Triangle Park, North Carolina. October 1989.

213. Ackerman, D.G., et al. Health Impacts, Emissions, and Emission Factors for Noncriteria Pollutants Subject to De Minimis Guidelines and Emitted from Stationary Conventional Combustion Processes. EPA-450/2-80-074. U. S. Environmental Protection Agency, Research Triangle Park, North Carolina. June 1980.

APPENDIX A

COMPOUNDS HAVING EMISSION FACTORS IN SECOND EDITION OF COMPILATION

TABLE A-1. ALPHABETICAL LIST OF AIR TOXICS IN SECOND EDITION OF COMPILATION

COMPOUND NAME	CAS NUMBER	CHEMICAL SYNONYM
Acenaphthene	83-32-9	
Acenaphthylene	208-96-8	
Acetaldehyde	75-07-0	
Acetic acid	64-19-7	Ethanoic Acid
Acetone	67-64-1	2-Propanone Dimethyl ketone
Acetonitrile	75-05-8	
Acetophenone	98-86-2	
Acetylene	74-86-2	
Acrolein	107-02-8	Acrylic aldehyde 2-Propenal
Acrylic acid	79-10-7	Propenoic acid
Acrylonitrile	107-13-1	Propenenitrile
Adipic acid	124-04-9	Hexanedioc acid
Aldehydes		
Aldrin	309-00-2	1,4:5,8-Dimethanonaphthalene,1,2,3,4,10, 10-Hexachloro-1,4,4
Allyl chloride	107-05-1	
Aluminum	7429-90-5	
Ammonia	7664-41-7	Anhydrous Ammonia
Ammonium sulfate (2:1)	7783-20-2	
Aniline	62-53-3	Phenylamine Aminobenzene
Anthracene	120-12-7	Paranaphthalene
Anthraquinone	84-65-1	Diphenylene Ketone
Antimony	7440-36-0	
Arsenic	7440-38-2	
Asbestos	1332-21-4	
Barium	7440-39-3	
Barium iron oxide	11138-11-7	

TABLE A-1. Continued

COMPOUND NAME	CAS NUMBER	CHEMICAL SYNONYM
Benz(a)anthracene	56-55-3	Benzo(a)anthracene
Benzaldehyde	100-52-7	
Benzene	71-43-2	
1,2-Benzisothiazol-3-one, 1,1-dioxide	81-07-2	Benzisothiazole
Benzo(a)pyrene	50-32-8	Benz(a)pyrene 1,2-Benzopyrene
Benzo(b)fluoranthene		
Benzodiazine		
Benzofuran	271-89-6	
Benzo(ghi)perylene	191-24-2	
Benzoic acid	65-85-0	
Benzoic acid, butyl ester	136-60-7	Butyl benzoate
Benzo(k)fluoranthene	207-08-9	
Benzothiophene	95-15-8	
Beryllium	7440-41-7	
Bibenzyl	103-29-7	Diphenyl ethane
Biphenyl	92-52-4	Bisphenol
Boron	7440-42-8	
4-Bromochlorobenzene	106-39-8	
Bromodichloromethane	75-27-4	
2-Bromo-4,6-dinitroaniline	1817-73-8	
1-Bromo-2,4-dinitrobenzene	584-48-5	
1,3-Butadiene	106-99-0	Butadiene Divinyl Biethylene
Butane	106-97-8	
1-Butanol	71-36-3	n-Butyl alcohol Butyl alcohol
2-Butyl alcohol	78-92-2	sec-Butyl alcohol
Butylbenzene	104-51-8	

TABLE A-1. Continued

COMPOUND NAME	CAS NUMBER	CHEMICAL SYNONYM
Butyraldehyde	123-72-8	Butanal
Cadmium	7440-43-9	
Calcium	7440-70-2	
Caprolactam	105-60-2	Hexahydro-2H-azapin-2-one
Carbon disulfide	75-15-0	
Carbon monoxide	630-08-0	
Carbon tetrachloride	56-23-5	Tetrachloromethane
Carbonyl sulfide	463-58-1	
Chlordane	57-74-9	Dichlorochlordene
Chloric acid, sodium salt	7775-09-9	Sodium chlorate
Chlorine	7782-50-5	
Chlorobenzene	108-90-7	
Chlorobenzenes		
Chloroethane	75-00-3	Ethyl chloride
Chloroform	67-66-3	Trichloromethane
Chloromethane	74-87-3	Methyl chloride
Chlorophenol	25167-80-0	
2-Chlorophenol	95-57-8	
Chlorophenols		Chlorinated phenols
Chloroprene	126-99-8	2-Chloro-1,3-butadiene
Chromium	7440-47-3	
Chromium (Cr 6+)	18540-29-9	Hexavalent chromium
Chromium (VI) oxide (1:3)	1333-82-0	Chromium oxide
Chrysene	218-01-9	
Coal tar creosote	8001-58-9	
Cobalt	7440-48-4	
Coke oven emissions		
Copper	7440-50-8	

TABLE A-1. Continued

COMPOUND NAME	CAS NUMBER	CHEMICAL SYNONYM
Copper oxide	1317-38-0	Copper oxide (CuO)
2-Cresol	95-48-7	o-Cresol 2-Cresylic acid
4-Cresol	106-44-5	p-Cresol 4-Cresylic acid
Crotylaldehyde	4170-30-3	Butenal
Cumene	98-82-8	
1,3-Cyclopentadiene	542-92-7	
Dibenz(a,h)anthracene	53-70-3	
Dibenzofuran	132-64-9	
1,2-Dibromoethane	106-93-4	Ethylene bromide
Dibutyl phthalate	84-74-2	Butyl phthalate Phthalic acide, dibutyl ester
1,2-Dichlorobenzene	95-50-1	o-Dichlorobenzene
1,3-Dichlorobenzene	541-73-1	m-Dichlorobenzene
1,4-Dichlorobenzene	106-46-7	p-Dichlorobenzene
Dichlorobenzene (mixed isomers)	25321-22-6	
Dichlorodibenzodioxins, total		
Dichlorodibenzofurans, total		
1,1-Dichloroethane	75-34-3	
1,2-Dichloroethane	107-06-2	Ethylene dichloride
1,2-Dichloroethylene, (e)-	156-60-5	1,2-Dichloroethylene, trans-
1,2-Dichloroethylene, (z)-	156-59-2	1,2-Dichloroethylene, cis-
2,4-Dichloro-6-nitroaniline	2683-43-4	
2,4-Dichlorophenol	120-83-2	
Dichloropropane	26638-19-7	
Diethyl phthalate	84-66-2	Phthalic acid, diethyl ester
Dihydroindene	496-11-7	
Dimethyl phthalate	131-11-3	Phthalic acid, dienthyl ester
Dimethylformamide, N,N-	68-12-2	

TABLE A-1. Continued

COMPOUND NAME	CAS NUMBER	CHEMICAL SYNONYM
Dimethylmethanamine, N,N-	75-50-3	Trimethylamine
2,4-Dimethylphenol	105-67-9	2,4-Xylenol
Dimethylstyrene	27576-03-0	
4,6-Dinitro-o-cresol	534-52-1	
2,4-Dinitrophenol	51-28-5	
Dioctyl phthalate	117-81-7	Bis-2-Ethylhexylphthalate Di(2-Ethylhexyl)phthalate DEHP Phthalic acid, bis(2-ethylhexyl)ester Phthalic acid, dioctyl ester
1,4-Dioxane	123-91-1	Diethylene dioxide Dioxane
Diphenyl ether	101-84-8	Diphenyl oxide
Dipropyl phthalate	131-16-8	Phthalic acid, dipropyl ester
Divinyl benzene, (mixed isomers)	1321-74-0	
Epichlorohydrin	106-89-8	Chloropropylene oxide 1-Chloro-2,3-epoxy-propane
Ethane	74-84-0	
2-(2-(2-Ethoxyethoxy)ethoxy) ethanol	112-50-5	Triethylene glycol ethyl ether
Ethyl acrylate	140-88-5	
Ethyl alcohol	64-17-5	Ethanol
2-Ethyl hexanal	123-05-7	
Ethyl styrene	28106-30-1	
Ethylbenzene	100-41-4	
Ethylene	74-85-1	
Ethylene glycol	107-21-1	
Ethylene oxide	75-21-8	1,2-Epoxyethane
Fluoranthene	206-44-0	
Fluorene	86-73-7	
Fluoride	16984-48-8	
Fluorine	7782-41-4	

TABLE A-1. Continued

COMPOUND NAME	CAS NUMBER	CHEMICAL SYNONYM
Formaldehyde	50-00-0	Formalin Methylene oxide
Gasoline	8006-61-9	
Heptachlorodibenzofurans, total		
Heptachlorodibenzo-p-dioxins, total		
Hexachlorobenzene	118-74-1	Perchlorobenzene
1,2,3,4,5,5-Hexachloro-1,3-cyclopentadiene	77-47-4	
1,2,3,4,7,8-Hexachlorodibenzofuran		
1,2,3,6,7,8-Hexachlorodibenzofuran		
1,2,3,7,8,9-Hexachlorodibenzofuran		
Hexachlorodibenzofurans, total		
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	57653-85-7	
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	34465-46-8	
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	19408-74-3	
Hexachlorodibenzo-p-dioxins, total		
1-Hexene	592-41-6	
Hydrogen chloride	7647-01-0	
Hydrogen cyanide	74-90-8	
Hydrogen fluoride	7664-39-3	
Hydrogen sulfide	7783-06-4	
Indene	95-13-6	
Indeno(1,2,3-cd)pyrene	193-39-5	
Iron	15438-31-0	
Isobutyraldehyde	78-84-2	
Lead	7439-92-1	
Lead oxide	1317-36-8	
Limonene	138-86-3	
Magnesium	7439-95-4	
Maleic anhydride	108-31-6	2,5-Furanedione

TABLE A-1. Continued

COMPOUND NAME	CAS NUMBER	CHEMICAL SYNONYM
Manganese	7439-96-5	
Manganese oxide	1317-34-6	
Mercury	7439-97-6	
Methanol	67-56-1	Methyl alcohol
2-Methoxyethanol	109-86-4	Methyl cellosolve Ethylene glycol monomethyl ether
2-(2-Methoxyethoxy) ethanol	111-77-3	Diethylene glycol methyl ether Diethylene glycol monomethyl ether
1-Methoxy-2-propanol	107-98-2	Propylene glycol
Methyl acetate	79-20-9	Acetic acid, methyl ester
Methyl ethyl ketone	78-93-3	Butanone 2-Butanone
Methyl methacrylate	80-62-6	Methacrylic acid, methyl ester Pegalan
Methyl thiophene		
3-Methylbutyraldehyde	590-86-3	Isopentaldehyde Isopentanal
1-Methyl-1-cyclohexene	591-49-1	
Methylene chloride	75-09-2	Dichloromethane
Methylnaphthalene	1321-94-4	
1-Methylnaphthalene	90-12-0	Alkylnaphthalenes (methyl) alpha-Methylnaphthalene
2-Methylnaphthalene	91-57-6	
4-Methyl-2-nitrophenol	119-33-5	2-Nitro-p-cresol
2-Methylpropane	75-28-5	Isobutane
Methylstyrene	25013-15-4	Vinyl toluene
Molybdenum	7439-98-7	
Monochlorodibenzofurans, total		
Naphthalene	91-20-3	Naphthalin
1,4-Naphthoquinone	130-15-4	
Nickel	7440-02-0	

TABLE A-1. Continued

COMPOUND NAME	CAS NUMBER	CHEMICAL SYNONYM
Nickel(II) oxide (1:1)	1313-99-1	
Nitrobenzene	98-95-3	Nitrobenzol
2-Nitrophenol	88-75-5	o-Nitrophenol
4-Nitrophenol	100-02-7	p-Nitrophenol
Octachlorodibenzofurans, total		
Octachlorodibenzo-p-dioxins, total		
1,2,3,7,8-Pentachlorodibenzofuran		
2,3,4,7,8-Pentachlorodibenzofuran	57117-31-4	
Pentachlorodibenzofurans, total		
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	40321-76-4	
Pentachlorodibenzo-p-dioxins, total		
Pentachlorophenol (PCP)	87-86-5	
1,3-Pentadiene	504-60-9	
Phenanthrene	85-01-8	
Phenol	108-95-2	
Phenols		
2-Phenyl-1-propanol	1123-85-9	beta-Methyl phenethyl alcohol
Phosgene	75-44-5	Carbon oxychloride Carbonyl chloride
Phosphorus (yellow or white)	7723-14-0	
Phthalic anhydride	85-44-9	
Polychlorinated biphenyls (PCBs)	1336-36-3	
Polychlorinated dibenzofurans, total		
Polychlorinated dibenzo-p-dioxins, total		
Polycyclic organic matter		POM
Polydimethyl siloxane	9016-00-6	Siloxane
Potassium	7440-09-7	
1,2-Propadiene	463-49-0	Allene
Propane	74-98-6	

TABLE A-1. Continued

COMPOUND NAME	CAS NUMBER	CHEMICAL SYNONYM
Propanol	71-23-8	Propyl alcohol 1-Propanol
Propionaldehyde	123-38-6	
Propyl benzene	103-65-1	
Propylene	115-07-1	Propene
Propylene oxide	75-56-9	Propene oxide 1,2-Epoxy propane
Pyrene	129-00-0	
Radionuclides		
Selenium	7782-49-2	
Silicon tetrafluoride	7783-61-1	
Silver	7440-22-4	
Sodium	7440-23-5	
Sodium hydroxide	1310-73-2	
Strontium	7440-24-6	
Styrene	100-42-5	Ethenylbenzene Phenyl ethylene Vinyl benzene
Sulfur chloride	10025-67-9	Sulfur monochloride
Sulfur trioxide	7446-11-9	
Sulfuric acid	7664-93-9	
Terephthalic acid	100-21-0	
Tetrachlorobenzenes		
2,3,7,8-Tetrachlorodibenzofuran		
Tetrachlorodibenzofurans, total		
2,3,7,8-Tetrachlorodibenzo-p-dioxin	1746-01-6	
Tetrachlorodibenzo-p-dioxins, total		
Tetrachloroethylene	127-18-4	Perchloroethylene PCE
Tetramethylbenzene		
Thallium	7440-28-0	

TABLE A-1. Continued

COMPOUND NAME	CAS NUMBER	CHEMICAL SYNONYM
Thiophene	110-02-1	
Tin	7440-31-5	
Tin oxide	18282-10-5	
Titanium	7440-32-6	
Titanium oxide	13463-67-7	Titanium dioxide
Toluene	108-88-3	Toluol Methyl benzene
1,2,4-Trichlorobenzene	120-82-1	
Trichlorobenzene (VAN)	12002-48-1	
Trichlorodibenzofurans, total		
Trichlorodibenzo-p-dioxins, total		
1,1,1-Trichloroethane	71-55-6	Methyl chloroform
Trichloroethylene	79-01-6	TCE Trichloroethene Ethylene trichloride
Trichlorofluoromethane	75-69-4	Freon 11 Fluorotrichloromethane
2,4,6-Trichlorophenol	88-06-2	
1,1,1-Trichloropropane	7789-89-1	
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	Freon 113 Trichlorotrifluoroethane
Trimethylbenzene (mixed isomers)	25551-13-7	
Vanadium	7440-62-2	
Vanadium oxide	1314-62-1	
Vinyl acetate	108-05-4	Acetic acid,vinyl ester
Vinyl chloride	75-01-4	Chloroethylene
Vinylidene chloride	75-35-4	1,1-Dichloroethylene
Volatile organic compound		VOC
1,2-Xylene	95-47-6	1,2-Dimethyl benzene o-Xylene
1,3-Xylene	108-38-3	1,3-Dimethyl benzene m-Xylene

TABLE A-1. Continued

COMPOUND NAME	CAS NUMBER	CHEMICAL SYNONYM
1,4-Xylene	106-42-3	1,4-Dimethyl benzene p-Xylene
Xylenes (mixed isomers)	1330-20-7	Xylene Dimethyl benzene
Zinc	7440-66-6	
Zinc oxide	1314-13-2	

TABLE A-2. CAS NUMBER LIST OF AIR TOXICS IN SECOND EDITION OF COMPILATION

CAS NUMBER	COMPOUND NAME	CHEMICAL SYNONYM
	Aldehydes	
	Benzo(b)fluoranthene	
	Benzodiazine	
	Chlorobenzenes	
	Chlorophenols	Chlorinated phenols
	Coke oven emissions	
	Dichlorodibenzodioxins, total	
	Dichlorodibenzofurans, total	
	Heptachlorodibenzofurans, total	
	Heptachlorodibenzo-p-dioxins, total	
	1,2,3,4,7,8-Hexachlorodibenzofuran	
	1,2,3,6,7,8-Hexachlorodibenzofuran	
	1,2,3,7,8,9-Hexachlorodibenzofuran	
	Hexachlorodibenzofurans, total	
	Hexachlorodibenzo-p-dioxins, total	
	Methyl thiophene	
	Monochlorodibenzofurans, total	
	Octachlorodibenzofurans, total	
	Octachlorodibenzo-p-dioxins, total	
	1,2,3,7,8-Pentachlorodibenzofuran	
	Pentachlorodibenzofurans, total	
	Pentachlorodibenzo-p-dioxins, total	
	Phenols	
	Polychlorinated dibenzofurans, total	
	Polychlorinated dibenzo-p-dioxins, total	
	Polycyclic organic matter	POM
	Radionuclides	
	Tetrachlorobenzenes	

TABLE A-2. Continued

CAS NUMBER	COMPOUND NAME	CHEMICAL SYNONYM
	2,3,7,8-Tetrachlorodibenzofuran	
	Tetrachlorodibenzofurans, total	
	Tetrachlorodibenzo-p-dioxins, total	
	Tetramethylbenzene	
	Trichlorodibenzo-p-dioxins, total	
	Trichlorodibenzofurans, total	
	Volatile organic compound	VOC
50-00-0	Formaldehyde	Formalin Methylene oxide
50-32-8	Benzo(a)pyrene	Benz(a)pyrene 1,2-Benzopyrene
51-28-5	2,4-Dinitrophenol	
53-70-3	Dibenz(a,h)anthracene	
56-23-5	Carbon tetrachloride	Tetrachloromethane
56-55-3	Benz(a)anthracene	Benzo(a)anthracene
57-74-9	Chlordane	Dichlorochlordene
62-53-3	Aniline	Phenylamine Aminobenzene
64-17-5	Ethyl alcohol	Ethanol
64-19-7	Acetic acid	Ethanoic Acid
65-85-0	Benzoic acid	
67-56-1	Methanol	Methyl alcohol
67-64-1	Acetone	2-Propanone Dimethyl ketone
67-66-3	Chloroform	Trichloromethane
68-12-2	Dimethylformamide, N,N-	
71-23-8	Propanol	Propyl alcohol 1-Propanol
71-36-3	1-Butanol	n-Butyl alcohol Butyl alcohol
71-43-2	Benzene	

TABLE A-2. Continued

CAS NUMBER	COMPOUND NAME	CHEMICAL SYNONYM
71-55-6	1,1,1-Trichloroethane	Methyl chloroform
74-84-0	Ethane	
74-85-1	Ethylene	
74-86-2	Acetylene	
74-87-3	Chloromethane	Methyl chloride
74-90-8	Hydrogen cyanide	
74-98-6	Propane	
75-00-3	Chloroethane	Ethyl chloride
75-01-4	Vinyl chloride	Chloroethylene
75-05-8	Acetonitrile	
75-07-0	Acetaldehyde	
75-09-2	Methylene chloride	Dichloromethane
75-15-0	Carbon disulfide	
75-21-8	Ethylene oxide	1,2-Epoxyethane
75-27-4	Bromodichloromethane	
75-28-5	2-Methylpropane	Isobutane
75-34-3	1,1-Dichloroethane	
75-35-4	Vinylidene chloride	1,1-Dichloroethylene
75-44-5	Phosgene	Carbon oxychloride Carbonyl chloride
75-50-3	Dimethylmethanamine, N,N-	Trimethylamine
75-56-9	Propylene oxide	Propene oxide 1,2-Epoxy propane
75-69-4	Trichlorofluoromethane	Freon 11 Fluorotrichloromethane
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	Freon 113 Trichlorotrifluoroethane
77-47-4	1,2,3,4,5,5-Hexachloro-1,3-cyclopentadiene	
78-84-2	Isobutyraldehyde	
78-92-2	2-Butyl alcohol	sec-Butyl alcohol

TABLE A-2. Continued

CAS NUMBER	COMPOUND NAME	CHEMICAL SYNONYM
78-93-3	Methyl ethyl ketone	Butanone 2-Butanone
79-01-6	Trichloroethylene	TCE Trichloroethene Ethylene trichloride
79-10-7	Acrylic acid	Propenoic acid
79-20-9	Methyl acetate	Acetic acid, methyl ester
80-62-6	Methyl methacrylate	Methacrylic acid, methyl ester Pegalan
81-07-2	1,2-Benzisothiazol-3-one, 1,1-dioxide	Benzisothiazole
83-32-9	Acenaphthene	
84-65-1	Anthraquinone	Diphenylene ketone
84-66-2	Diethyl phthalate	Phthalic acid, diethyl ester
84-74-2	Dibutyl phthalate	Butyl phthalate Phthalic acide, dibutyl ester
85-01-8	Phenanthrene	
85-44-9	Phthalic anhydride	
86-73-7	Fluorene	
87-86-5	Pentachlorophenol (PCP)	
88-06-2	2,4,6-Trichlorophenol	
88-75-5	2-Nitrophenol	o-Nitrophenol
90-12-0	1-Methylnaphthalene	Alkylnaphthalenes (methyl) alpha-Methylnaphthalene
91-20-3	Naphthalene	Naphthalin
91-57-6	2-Methylnaphthalene	
92-52-4	Biphenyl	Bisphenol
95-13-6	Indene	
95-15-8	Benzothiophene	
95-47-6	1,2-Xylene	1,2-Dimethyl benzene o-Xylene
95-48-7	2-Cresol	o-Cresol 2-Cresylic acid

TABLE A-2. Continued

CAS NUMBER	COMPOUND NAME	CHEMICAL SYNONYM
95-50-1	1,2-Dichlorobenzene	o-Dichlorobenzene
95-57-8	2-Chlorophenol	
98-82-8	Cumene	
98-86-2	Acetophenone	
98-95-3	Nitrobenzene	Nitrobenzol
100-02-7	4-Nitrophenol	p-Nitrophenol
100-21-0	Terephthalic acid	
100-41-4	Ethylbenzene	
100-42-5	Styrene	Ethenylbenzene Phenyl ethylene Vinyl benzene
100-52-7	Benzaldehyde	
101-84-8	Diphenyl ether	Diphenyl oxide
103-29-7	Bibenzyl	Diphenyl ethane
103-65-1	Propyl benzene	
104-51-8	Butylbenzene	
105-60-2	Caprolactam	Hexahydro-2H-azapin-2-one
105-67-9	2,4-Dimethylphenol	2,4-Xylenol
106-39-8	4-Bromochlorobenzene	
106-42-3	1,4-Xylene	1,4-Dimethyl benzene p-Xylene
106-44-5	4-Cresol	p-Cresol 4-Cresylic acid
106-46-7	1,4-Dichlorobenzene	p-Dichlorobenzene
106-89-8	Epichlorohydrin	Chloropropylene oxide 1-Chloro-2,3-epoxy-propane
106-93-4	1,2-Dibromoethane	Ethylene bromide
106-97-8	Butane	
106-99-0	1,3-Butadiene	Butadiene Divinyl Biethylene

TABLE A-2. Continued

CAS NUMBER	COMPOUND NAME	CHEMICAL SYNONYM
107-02-8	Acrolein	Acrylic aldehyde 2-Propenal
107-05-1	Allyl chloride	
107-06-2	1,2-Dichloroethane	Ethylene dichloride
107-13-1	Acrylonitrile	Propenenitrile
107-21-1	Ethylene glycol	
107-98-2	1-Methoxy-2-propanol	Propylene glycol
108-05-4	Vinyl acetate	Acetic acid,vinyl ester
108-31-6	Maleic anhydride	2,5-Furanedione
108-38-3	1,3-Xylene	1,3-Dimethyl benzene m-Xylene
108-88-3	Toluene	Toluol Methyl benzene
108-90-7	Chlorobenzene	
108-95-2	Phenol	
109-86-4	2-Methoxyethanol	Methyl cellosolve Ethylene glycol monomethyl ether
110-02-1	Thiophene	
111-77-3	2-(2-Methoxyethoxy) ethanol	Diethylene glycol methyl ether Diethylene glycol monomethyl ether
112-50-5	2-(2-(2-Ethoxyethoxy)ethoxy) ethanol	Triethylene glycol ethyl ether
115-07-1	Propylene	Propene
117-81-7	Dioctyl phthalate	Bis-2-Ethylhexylphthalate Di(2-Ethylhexyl)phthalate DEHP Phthalic acid, bis(2-ethylhexyl)ester Phthalic acid, dioctyl ester
118-74-1	Hexachlorobenzene	Perchlorobenzene
119-33-5	4-Methyl-2-nitrophenol	2-Nitro-p-cresol
120-12-7	Anthracene	Paranaphthalene
120-82-1	1,2,4-Trichlorobenzene	
120-83-2	2,4-Dichlorophenol	
123-05-7	2-Ethyl hexanal	

TABLE A-2. Continued

CAS NUMBER	COMPOUND NAME	CHEMICAL SYNONYM
123-38-6	Propionaldehyde	
123-72-8	Butyraldehyde	Butanal
123-91-1	1,4-Dioxane	Diethylene dioxide Dioxane
124-04-9	Adipic acid	Hexanedioc acid
126-99-8	Chloroprene	2-Chloro-1,3-butadiene
127-18-4	Tetrachloroethylene	Perchloroethylene PCE
129-00-0	Pyrene	
130-15-4	1,4-Naphthoquinone	
131-11-3	Dimethyl phthalate	Phthalic acid, dimethyl ester
131-16-8	Dipropyl phthalate	Phthalic acid, dipropyl ester
132-64-9	Dibenzofuran	
136-60-7	Benzoic acid, butyl ester	Butyl benzoate
138-86-3	Limonene	
140-88-5	Ethyl acrylate	
156-59-2	1,2-Dichloroethylene, (z)-	1,2-Dichloroethylene, cis-
156-60-5	1,2-Dichloroethylene, (e)-	1,2-Dichloroethylene, trans-
191-24-2	Benzo(ghi)perylene	
193-39-5	Indeno(1,2,3-cd)pyrene	
206-44-0	Fluoranthene	
207-08-9	Benzo(k)fluoranthene	
208-96-8	Acenaphthylene	
218-01-9	Chrysene	
271-89-6	Benzofuran	
309-00-2	Aldrin	1,4:5,8-Dimethanonaphthalene,1,2,3,4,10, 10-Hexachloro-1,4,4
463-49-0	1,2-Propadiene	Allene
463-58-1	Carbonyl sulfide	
496-11-7	Dihydroindene	

TABLE A-2. Continued

CAS NUMBER	COMPOUND NAME	CHEMICAL SYNONYM
504-60-9	1,3-Pentadiene	
534-52-1	4,6-Dinitro-o-cresol	
541-73-1	1,3-Dichlorobenzene	m-Dichlorobenzene
542-92-7	1,3-Cyclopentadiene	
584-48-5	1-Bromo-2,4-dinitrobenzene	
590-86-3	3-Methylbutyraldehyde	Isopentaldehyde Isopentanal
591-49-1	1-Methyl-1-cyclohexene	
592-41-6	1-Hexene	
630-08-0	Carbon monoxide	
1123-85-9	2-Phenyl-1-propanol	beta-Methyl phenethyl alcohol
1310-73-2	Sodium hydroxide	
1313-99-1	Nickel(II) oxide (1:1)	
1314-13-2	Zinc oxide	
1314-62-1	Vanadium oxide	
1317-34-6	Manganese oxide	
1317-36-8	Lead oxide	
1317-38-0	Copper oxide	Copper oxide (CuO)
1321-74-0	Divinyl benzene, (mixed isomers)	
1321-94-4	Methylnaphthalene	
1330-20-7	Xylenes (mixed isomers)	Xylene Dimethyl benzene
1332-21-4	Asbestos	
1333-82-0	Chromium (VI) oxide (1:3)	Chromium oxide
1336-36-3	Polychlorinated biphenyls (PCBs)	
1746-01-6	2,3,7,8-Tetrachlorodibenzo-p-dioxin	
1817-73-8	2-Bromo-4,6-dinitroaniline	
2683-43-4	2,4-Dichloro-6-nitroaniline	
4170-30-3	Crotylaldehyde	Butenal

TABLE A-2. Continued

CAS NUMBER	COMPOUND NAME	CHEMICAL SYNONYM
7429-90-5	Aluminum	
7439-92-1	Lead	
7439-95-4	Magnesium	
7439-96-5	Manganese	
7439-97-6	Mercury	
7439-98-7	Molybdenum	
7440-02-0	Nickel	
7440-09-7	Potassium	
7440-22-4	Silver	
7440-23-5	Sodium	
7440-24-6	Strontium	
7440-28-0	Thallium	
7440-31-5	Tin	
7440-32-6	Titanium	
7440-36-0	Antimony	
7440-38-2	Arsenic	
7440-39-3	Barium	
7440-41-7	Beryllium	
7440-42-8	Boron	
7440-43-9	Cadmium	
7440-47-3	Chromium	
7440-48-4	Cobalt	
7440-50-8	Copper	
7440-62-2	Vanadium	
7440-66-6	Zinc	
7440-70-2	Calcium	
7446-11-9	Sulfur trioxide	
7647-01-0	Hydrogen chloride	

TABLE A-2. Continued

CAS NUMBER	COMPOUND NAME	CHEMICAL SYNONYM
7664-39-3	Hydrogen fluoride	
7664-41-7	Ammonia	Anhydrous Ammonia
7664-93-9	Sulfuric acid	
7723-14-0	Phosphorus (yellow or white)	
7775-09-9	Chloric acid, sodium salt	Sodium chlorate
7782-41-4	Fluorine	
7782-49-2	Selenium	
7782-50-5	Chlorine	
7783-06-4	Hydrogen sulfide	
7783-20-2	Ammonium sulfate (2:1)	
7783-61-1	Silicon tetrafluoride	
7789-89-1	1,1,1-Trichloropropane	
8001-58-9	Coal tar creosote	
8006-61-9	Gasoline	
9016-00-6	Polydimethyl siloxane	Siloxane
10025-67-9	Sulfur chloride	Sulfur monochloride
11138-11-7	Barium iron oxide	
12002-48-1	Trichlorobenzene (VAN)	
13463-67-7	Titanium oxide	Titanium dioxide
15438-31-0	Iron	
16984-48-8	Fluoride	
18282-10-5	Tin oxide	
18540-29-9	Chromium (Cr 6+)	Hexavalent chromium
19408-74-3	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	
25013-15-4	Methylstyrene	Vinyl toluene
25167-80-0	Chlorophenol	
25321-22-6	Dichlorobenzene (mixed isomers)	
25551-13-7	Trimethylbenzene (mixed isomers)	

TABLE A-2. Continued

CAS NUMBER	COMPOUND NAME	CHEMICAL SYNONYM
26638-19-7	Dichloropropane	
27576-03-0	Dimethylstyrene	
28106-30-1	Ethyl styrene	
34465-46-8	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	
40321-76-4	1,2,3,7,8-Pentachlorodibenzo-p-dioxin	
57117-31-4	2,3,4,7,8-Pentachlorodibenzofuran	
57653-85-7	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	

APPENDIX B

SOURCES HAVING EMISSION FACTORS IN SECOND EDITION OF COMPILATION

Acetaldehyde production
Acetic anhydride production
Acetone/phenol manufacture from cumene
Acrolein production
Acrylic acid production
Acrylic acid production - propylene oxidation
Acrylonitrile production
Acrylonitrile production - SOHIO process
Acrylonitrile-butadiene-styrene copolymer production
Adhesives application
Adipic acid production
Adiponitrile production
Aerosol packaging
Aerosol products use
Agricultural industry-field burning of plastic crop covers
Agricultural spraying
Aluminum reduction
Ammonia synthesis
Ammonium nitrate production
Ammonium phosphate production
Ammonium sulfate production
Ammonium sulfate production - caprolactam by-product
Ammonium sulfate production - coke oven by-product
Ammonium sulfate production - synthetic process
Anhydrous ammonia production
Aniline production
Animal feed defluorination
Asbestos - cement pipe manufacturing
Asbestos - cement sheet manufacturing
Asbestos building waste disposal
Asbestos coatings and sealants manufacturing
Asbestos friction materials manufacturing
Asbestos gaskets and packings manufacturing
Asbestos insulation materials manufacturing
Asbestos milling
Asbestos mining
Asbestos paper manufacturing
Asbestos product fabrication
Asbestos product usage
Asbestos textiles manufacturing
Asbestos-reinforced plastics manufacturing
Ascorbic acid production
Asphalt (hot mix) production
Asphalt distribution/use
Asphalt production
Asphalt roofing material production
Asphaltic concrete production
Automobile carburetor manufacture
Automotive products use
Bagasse combustion
Bakeries
Battery (dry cell) manufacture

Battery (lead-acid) manufacture
Battery (nickel-cadmium) manufacture
Battery manufacture
Beef cattle feed lots
Beer production
Benzaldehyde production
Benzene production
Benzene storage tanks
Benzoic acid production
Benzyl chloride production
Beryl ore mining
Beryllium alloy - production
Beryllium alloy - stamping/drawing
Beryllium metal fabrication
Bisphenol A production
Brick manufacture
1,3-Butadiene production
Butadiene cotrimer production
Butadiene production - recovery process
Butadiene-vinylpyridine latex production
1,4-Butanediol production
CCl4 and perchloroethylene production - propane chlorination
CCl4 production - CS2 chlorination
CCl4 production - hydrocarbon chlorinolysis
CCl4 production - methane chlorination
CCl4 production - methanol/methyl chloride chlorination
Cadmium electroplating
Cadmium pigments manufacture
Caprolactam production
Carbon black manufacture
Carbon black manufacture - oil furnace
Cast iron production
Catalyst manufacture
Cement kilns cofiring waste
Cement manufacture
Cement manufacture - dry process
Cement manufacture - wet process
Ceramics
Chain saw exhausts
Charcoal manufacture
Chemical applications
Chemical distribution facilities
Chlorine production (chlor-alkali)
Chlorobenzene prod. (mono- & di-); direct chlorination
Chlorobenzene production
Chlorofluorocarbon 113 and 114 production
Chloroform production (any method)
Chloroform production - methane chlorination
Chloroform production - methanol/CH3Cl chlorination
Chloromethane production - methane chlorination
Chloromethane production - methanol/CH3Cl chlorination
Chrome plating, decorative

Chrome plating, hard
Chromic acid production
Chromite ore refining
Coal and refuse-derived fuel combustion
Coal combustion
Coal combustion, commercial
Coal combustion, industrial
Coal combustion, residential
Coal combustion, utility
Coal refuse pile burning
Coffee bean roasting
Coke by-product plants
Coke oven gas combustion
Coke production
Coke production, by-product recovery process
Controlled/prescribed burning
Cooling towers, industrial
Cooling towers, utility
Copper ore milling/processing
Copper smelting
Copper smelting-high arsenic ore
Copper smelting-low arsenic ore
Copper sulfate production
Cotton defoliating/dessicating
Cotton field spraying with arsenic acid
Cotton ginning
Cresol(p-) production
Cumene production
Cyclohexane production by benzene hydrogenation process
Degreasing operations using MC
Degreasing operations using Methyl Chloroform
Degreasing operations using PCE
Degreasing operations using TCE
Degreasing operations using trichlorotrifluoroethane
Demolition and renovation of buildings
Dental preparations use
Diammonium phosphate production
Dichloroaniline production
Dichloroaniline(3,4) production
Dichlorobenzene(1,2) production
Dichlorobenzene(1,4) production
Die-casting production using zinc-based alloys
Dielectric fluid use in electrical apparatus
1,3-Diisocyanate production
Dimethyl terephthalate production
Dimethyl terephthalate production by methanol esterification
Dinitrobenzene production
Dodecylphenol production
Drum and barrel furnace
Dry chlorinated paraffin production
Dry cleaning, perchloroethylene
Dry cleaning, trichlorotrifluoroethane

Dye synthesis
Electrical apparatus manufacture
Epichlorohydrin production
Epichlorohydrin production by hydrochlorination
Epichlorohydrin use as a feedstock in batch processes
Epoxy resins (continuous process) production
Ethyl chloride production by hydrochlorination
Ethyl chloride production by hydrochlorination of ethanol
Ethyl chloride production by hydrochlorination of ethylene
Ethylbenzene production
Ethylbenzene/styrene production
Ethylene amine production
Ethylene dichloride production
Ethylene dichloride production - balanced process
Ethylene dichloride production - direct chlorination
Ethylene dichloride production - oxyhydrochlor. of ethylene
Ethylene dichloride production - oxyhydrochlorination
Ethylene dichloride/vinyl chloride production
Ethylene oxide production by air-oxidation process
Ethylene oxide production by oxygen-oxidation process
Ethylene production
Ethylene production from naphtha/gas oil
Fabric production- dodecanedioic acid intermediate
Ferroalloy production
Ferrochromium production by electric arc furnace process
Ferromanganese production by electric arc furnace process
Ferrovanadium production
Fertilizer application
Fertilizer application, superphosphate fertilizer
Fertilizer mixing
Fish processing plants
Flame attenuation wool glass fiber production
Fluorocarbon 11/12 production
Fluorocarbon 22 production
Foodstuff fumigation
Foodstuff fumigation, with recycling water-sealed pump
Formaldehyde production, metal oxide catalyst process
Formaldehyde production, silver catalyst process
Frit smelting
Fumigation or sterilization
Fungicide application
Fungicide application - pentachloronitrobenzene
Gasoline blending at refineries
Gasoline loading at bulk plants
Gasoline loading at bulk terminals and bulk plants
Gasoline loading in marine vessels
Gasoline loading of tank car/truck with leaded gasoline
Gasoline loading of tank trucks at bulk plants
Gasoline loading of tank trucks at bulk terminals
Gasoline marketing activities
Gasoline storage at bulk plants
Gasoline storage at bulk terminals

storage at service stations
Gasoline use
General laboratory use
Glass fiber manufacture
Glass manufacturing
Glass manufacturing, pressed/blown glass
Glycerin production - chlorination process
Glycol ether production - methanol process
Hazardous waste incineration
Herbicide application - Dacthal
Herbicide production
Hexachlorocyclopentadiene production
Hexamethylene-tetramine production
Hospital sterilization
Hospital sterilizer, table-top
Hospital waste incineration
Hydrochloric acid manufacture
Hydrochloric acid manufacture - by-product process
Hydrochloric acid manufacture - mannheim process
Hydrochloric acid manufacture - synthesis process
Hydrofluoric acid manufacture
HypalonR production
Industrial carbon regeneration
Industrial wastewater treatment
Instrument manufacture
Internal combustion engines - mobile
Internal combustion engines - stationary
Iron (gray) foundries
Iron and steel foundry
Iron and steel production
Iron foundries
Iron ore processing
Iron ore production
Isophthalic acid production
Isopropyl alcohol production
Kraft pulp - sulfite pulping
Land treatment
Landfill
Landfill of HCB waste
Lead smelting
Lime kilns cofiring wastes
Linear alkylbenzene chlorination process
Linear alkylbenzene olefin process
Maleic anhydride production
Manganese chemical production
Manganese dioxide (synthetic) production
Manganese mining
Manganese-bearing ferroalloy prod/electric arc furnace proc.
Melamine-formaldehyde resin production
Mercury mining
Methane chlorination
Methyl chloride chlorination

Methyl chloroform production
Methyl chloroform production by hydrochlorination
Methyl chloroform production from ethane
Methyl chloroform production from vinyl chloride
Methylene chloride production
Methylene chloride production - methane chlorination
Methylene chloride production - methyl chloride chlorination
Methylene di-para-phenylene isocyanate (MDI) production
Methylmethacrylate-butadiene- styrene resin production
Methythiohydroxybutanoic acid production
Mineral wool manufacturing
Municipal waste combustion
Naphthalene production
Natural gas combustion
Natural gas combustion - commercial/institutional
Natural gas combustion - utility
Neoprene manufacture
Nickel electro-deposition
Nitrile elastomer production
Nitrobenzene and aniline production
Nitrobenzene production
Nitrobenzene use as a chemical intermediate
Nonferrous alloy production
Nonferrous metals production
Nonylphenol production
Oil and coal combustion
Oil combustion
Oil combustion, commercial
Oil combustion, industrial
Oil combustion, residential
Oil combustion, utility
Oil shale retorting
Open burning
Oxybisphenoxarsine and 1,3-diisocyanate production
Oxybisphenoxarsine production
Paint and coating application
Paint and coating manufacture
Paint application
Paint stripper formulation
Paint stripping
Paper coating
Particle board manufacturing-wood processing
Paved roads
Pentachlorophenol production
Pentaerythritol production
Perchloroethylene and trichloroethylene production
Perchloroethylene production
Perchloroethylene production - EDC chlorination
Perchloroethylene production by chlorination process
Pesticide application
Pesticide intermediates manufacture - Dicamba
Pesticide intermediates manufacture - Stirofos

Pesticide manufacturing
Petrochemical production
Petroleum refinery
Petroleum refinery - sulfur recovery plants
Petroleum refinery with cracking/reforming
Petroleum refinery without cracking/reforming
Pharmaceutical manufacture
Pharmaceuticals containing mercuric compounds application
Phenol production
Phenol production using cumene process
Phenol-formaldehyde resin production
Phenolic resin production
Phosgene production
Phosgene production by chlorination of CO
Phosgene/diisocyanate production
Phosphate fertilizer manufacturing
Phosphate fertilizer manufacturing - wet process
Phosphate rock processing
Phosphoric acid production
Phosphoric acid production - wet process
Phosphorus (elemental) production
Photographic film processing
Phthalic anhydride production
Phthalic anhydride production - naphthalene process
Phthalic anhydride production - xylene process
Plastic stabilizers manufacture
Plastics processing
Polyacetal resin production
Polybutadiene production
Polycarbonate production
Polyether polyol production
Polystyrene production - batch process
Polystyrene production - continuous process
Polysulfide rubber production
Polyurethane foam (flexible slabstock) production
Polyurethane foam production
Polyvinyl chloride production
Primary aluminum production
Primary aluminum smelting
Primary and secondary zinc oxide production
Primary cadmium smelting
Primary copper smelting
Primary lead smelting
Primary mercury production
Primary nickel ore smelting
Primary zinc (slab) production
Primary zinc oxide production
Primary zinc production by electrolytic process
Primary zinc smelting
Primary zinc/zinc oxide smelting
Printed circuit board manufacture
Propylene glyol production

Propylene oxide production
Propylene oxide production by chlorohydrination
Propylene oxide production; peroxidation process
Pulp/paper mill, integrated
Pulp/paper mill, kraft mill paper process
Pulp/paper mill, kraft paper recovery boilers
Pulp/paper mill, kraft pulp
Pulp/paper mill, kraft pulp - sulfite pulping
Pulp/paper mill, pulp and paper bleaching
Rail tank car cleaning
Refractory production
Refractory production: chrome-magnesite brick
Refractory production: chromic oxide brick
Rotary spin wool glass fiber production
Salicylic acid production (aspirin)
Scrap tire, open burning
Secondary copper smelting
Secondary fiber mills
Secondary iron and steel production
Secondary lead smelting
Secondary mercury production
Secondary processing of nickel-bearing scrap
Secondary zinc smelting
Sewage sludge incineration
Silicomanganese production by electric arc furnace process
Solder manufacture
Solid waste incineration, commercial
Solvent application
Solvent recycling facility
Steel foundries
Steel production
Styrene-butadiene copolymer production
Styrene-butadiene copolymers production - emulsion crumb
Styrene-butadiene copolymers production - emulsion latex
Styrene-butadiene rubber produc. by emulsion polymerization
Styrene-butadiene rubber produc. by solution polymerization
Styrene-butadiene rubber production
Sulfuric acid production - contact process
Sulfuric acid production - single absorption process
Superphosphate (granular triple) production
Superphosphate (normal) production
Superphosphate (run-of-the-pile triple) production
Superphosphoric acid production
Symmetrical tetrachloropyridine production
Synthetic fibers production - viscose rayon
Synthetic rubber production
Tank truck cleaning
Tank truck transport
Terephthalic acid (crude) prod. by air oxidation process
Terephthalic acid (crude) production
Terephthalic acid (purified) production
Terephthalic acid production

Tetraethyl lead production
Tetrahydrobenzaldehyde production
Tetrahydrophthalic anhydride/acid production
Toluene diisocyanate production
Toluene production
Toluene production via catalytic reformate
Trichloroethylene production
Trichloroethylene production - EDC chlorination
Trichloroethylene production by oxyhydrochlorination process
Trimethylolpropane production
Unsaturated polyester resin production
Uranium mining
Urea (solid) production
Urea production
Urea-formaldehyde resin production
Vanadium mining and processing
Vehicle tire wear
Vinyl acetate production
Vinyl chloride monomer production
Vinyl toluene production
Vinyl/asbestos tile manufacturing
Vinylidene chloride copolymer fabric. (cellophane coating)
Vinylidene chloride copolymer fabric. (for extrusion)
Vinylidene chloride copolymer fabric. (for latex coating)
Vinylidene chloride polymerization
Vinylidene chloride production
Waferboard manufacture
Waste combustion - industrial
Waste combustion - industrial boilers cofiring wastes
Waste incineration
Waste oil combustion
Waste oil combustion - cofire PCB-spiked waste oil/No.6 oil
Wastewater treatment
Wastewater treatment - organics removal by activated carbon
Water treatment
Wine making
Wire reclamation incineration
Wood combustion
Wood combustion, industrial
Wood combustion, residential
Wood preserving
Woven fabric finishing
Xylene (mixed) production, catalytic reformate
Xylene (mixed) production, coal-derived
Xylene (mixed) production, pyrolysis gasoline
Xylene (mixed) production, toluene disproportionation
Xylene isomer production: m-xylene
Xylene isomer production: o-xylene
Xylene isomer production: p-xylene

APPENDIX C

BIBLIOGRAPHY

BIBLIOGRAPHY

Memorandum from R.L. Ajax and Susan R. Wyatt, U. S. Environmental Protection Agency, to J. R. Farmer, U.S. Environmental protection Agency, March 10, 1987. Information Memorandum - Emissions of Trichloroethylene, Perchloroethylene, Methylene Chloride, Ethylene Dichloride, Chloroform, Acrylonitrile, and Carbon Tetrachloride from Publicly Owned Treatment Works.

U. S. Environmental Protection Agency. Affordability Analysis Of Lead Emission Controls for a Smelter-Refinery. EPA-450/3-90-001. Control Technology Center, Research Triangle Park, North Carolina. October 1989.

U. S. Environmental Protection Agency. Air Stripping of Contaminated Water Sources - Air Emissions and Controls. EPA-450/3-87-017. Control Technology Center, Research Triangle Park, North Carolina. August 1987.

U. S. Environmental Protection Agency. Aquaculture Systems for Wastewater Treatment, An Engineering Assessment. EPA-430-9-80-007. Office of Water, Washington, D.C. June 1980.

U. S. Environmental Protection Agency. A Review of Standards of Performance for New Stationary Sources - Coal Preparation Plants. EPA-450/3-80-022. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. December 1980.

U. S. Environmental Protection Agency. A Review of Standards of Performance for New Stationary Sources - Incinerators. EPA-450/3-79-009. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. March 1979.

U. S. Environmental Protection Agency. A Review of Standards of Performance for New Stationary Sources - Nitric Acid Plants. EPA-450/3-79-013. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. March 1979.

U. S. Environmental Protection Agency. A Review of Standards of Performance for New Stationary Sources - Portland Cement Industry. EPA-450/3-79-012. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. March 1979.

U. S. Environmental Protection Agency. A Review of Standards of Performance for New Stationary Sources - Sewage Sludge Incinerators. EPA-450/3-79-010. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. March 1979.

U. S. Environmental Protection Agency. Air Oxidation Processes in Synthetic Organic Chemical Manufacturing Industry - Background Information for Proposed Standards, Draft EIS. EPA-450/3-82-001a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. October 1983.

U. S. Environmental Protection Agency. Ammonium Sulfate Manufacture - Background Information for Promulgated Emission Standards. EPA-450/3-79-034b. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. October 1980.

U. S. Environmental Protection Agency. Ammonium Sulfate Manufacture - Background Information for Proposed Emission Standards. EPA-450/3-79-034a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. December 1979.

U. S. Environmental Protection Agency. Asphalt Roofing Manufacturing Industry - Background Information for Promulgated Standards. EPA-450/3-80-021b. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. July 1982.

U. S. Environmental Protection Agency. Asphalt Roofing Manufacturing Industry - Background Information for Proposed Standards. EPA-450/3-80-021a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. June 1980.

U. S. Environmental Protection Agency. Automobile and Light-Duty Truck Surface Coating Operations - Background Information for Promulgated Standards. EPA-450/3-79-030b. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. September 1980.

U. S. Environmental Protection Agency. Automobile and Light-Duty Truck Surface Coating Operations - Background Information for Proposed Standards, Draft EIS. EPA-450/3-79-030. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. September 1979.

U. S. Environmental Protection Agency. Background Information For Proposed New-Source Performance Standards: Steam Generators, Incinerators, Portland Cement Plants, Nitric Acid Plants, Sulfuric Plants. EPA-APTD-0711. Research Triangle Park, North Carolina. August 1971.

U. S. Environmental Protection Agency. Background Information For New Source Performance Standards: Primary Copper, Zinc, And Lead Smelters. Volume 1: Proposed Standards. EPA-450/2-74-002a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. October 1974.

U. S. Environmental Protection Agency. Background Information For Proposed Standards Of Performance: Coal Preparation Plants. Volume 1: Proposed Standards. EPA-450/2-74-021a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. October 1974.

U. S. Environmental Protection Agency. Background Information For Proposed Standards Of Performance: Coal Preparation Plants. Volume 2: Test Data Summary. EPA-450/2-74-021b. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. October 1974.

U. S. Environmental Protection Agency. Background Information For Standards Of Performance: Coal Preparation Plants. Volume 3: Supplemental Information. EPA-450/2-74-021c. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. January 1976.

U. S. Environmental Protection Agency. Background Information For Standards Of Performance: Electric Arc Furnaces In The Steel Industry. Volume 2: Test Data Summary. EPA-450/2-74-017b. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. October 1974.

U. S. Environmental Protection Agency. Background Information For Standards Of Performance: Electric Submerged Arc Furnaces For Production Of Ferroalloys. Volume 1: Proposed Standards. EPA-450/2-74-018a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. October 1974.

U. S. Environmental Protection Agency. Background Information For Standards Of Performance: Electric Submerged Arc Furnaces For Production Of Ferroalloys. Volume 3: Supplemental Information. EPA-450/2-74-018c. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. April 1976.

U. S. Environmental Protection Agency. Background Information For Standards Of Performance: Electric Submerged Arc Furnaces For Production Of Ferroalloys. Volume 2: Test Data Summary. EPA-450/2-74-018b. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. October 1974.

U. S. Environmental Protection Agency. Background Information For Standards Of Performance: Primary Aluminum Industry. Volume 1: Proposed Standards. EPA-450/2-74-020a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. October 1974.

U. S. Environmental Protection Agency. Background Information For Standards Of Performance: Primary Aluminum Industry. Volume 3: Supplemental Information. EPA-450/2-74-020c. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. January 1976.

U. S. Environmental Protection Agency. Background Information For Standards Of Performance: Primary Aluminum Industry. Volume 2: Test Data Summary. EPA-450/2-74-020b. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. October 1974.

U. S. Environmental Protection Agency. Background Information On Development Of National Emission Standards For Hazardous Air Pollutants: Asbestos, Beryllium, And Mercury. EPA-APTD-1503. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. March 1973.

U. S. Environmental Protection Agency. Background Information - Proposed National Emission Standards For Hazardous Air Pollutants: Asbestos, Beryllium, And Mercury. EPA-APTD-0753. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. December 1971.

U. S. Environmental Protection Agency. Benzene Emissions from Coke By-Product Recovery Plants - Background Information for Proposed Standards. EPA-450/3-83-016a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. May 1984.

U. S. Environmental Protection Agency. Benzene Emissions from Ethylbenzene Styrene Industry - Background Information for Proposal to Withdraw Proposed Standards. EPA-450/3-84-003. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. March 1984.

U. S. Environmental Protection Agency. Benzene Emissions from Ethylbenzene Styrene Industry - Background Information for Proposed Standards. EPA-450/3-79-035a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. August 1980.

U. S. Environmental Protection Agency. Benzene Emissions from Benzene Storage Tanks - Background Information for Proposal to Withdraw Proposed Standards. EPA-450/3-84-004. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. March 1984.

U. S. Environmental Protection Agency. Benzene Emissions from Benzene Storage Tanks - Background Information for Proposed Standards, Draft EIS. EPA-450/3-80-034a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. December 1980.

U. S. Environmental Protection Agency. Beverage Can Surface Coating Industry - Background Information for Promulgated Standards of Performance, EIS. EPA-450/3-80-036b. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. August 1983.

U. S. Environmental Protection Agency. Beverage Can Surface Coating Industry - Background Information for Proposed Standards, Draft EIS. EPA-450/3-80-036a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. September 1980.

U. S. Environmental Protection Agency. Bulk Gasoline Terminals - Background Information for Proposed Standards, Draft EIS. EPA-450/3-80-038a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. December 1980.

U. S. Environmental Protection Agency. Compilation and Speciation of National Emissions Factors For Consumer/Commercial Solvent Use. EPA-450/2-89-008. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. April 1989.

U. S. Environmental Protection Agency. Construction Costs for Municipal Wastewater Treatment Plants: 1973 - 1978. EPA-430-9-80-003. Office of Water, Washington, D.C. April 1980.

U. S. Environmental Protection Agency. Control Technology Assessment Report for Air Emissions From Wastewater Treatment Operations. EPA-450/3-89-008. Control Technology Center, Research Triangle Park, North Carolina. April 1989.

U. S. Environmental Protection Agency. Distillation Operations In Synthetic Organic Chemical Manufacturing - Background Information for Proposed Standards, Draft EIS. EPA-450/3-83-005a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. December 1983.

U. S. Environmental Protection Agency. Draft Guideline Document: Control of TRS Emissions From Existing Kraft Pulp Mills. EPA-450/2-78-003a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. January 1978.

U. S. Environmental Protection Agency. Electric Utility Steam Generating Units - Background Information for Promulgated Emission Standards, EIS. EPA-450/3-79-021. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. June 1979.

U. S. Environmental Protection Agency. Electric Utility Steam Generating Units - Background Information for Proposed NOx Emission Standards. EPA-450/2-78-005a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. July 1978.

U. S. Environmental Protection Agency. Electric Utility Steam Generating Units - Background Information for Proposed Particulate Matter Emission Standards. EPA-450/2-78-006a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. July 1978.

U. S. Environmental Protection Agency. Electric Utility Steam Generating Units - Background Information for Proposed SO2 Emission Standards. EPA-450/2-78-007a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. July 1978.

U. S. Environmental Protection Agency. Electric Utility Steam Generating Units - Background Information for Proposed SO2 Emission Standards Supplement. EPA-450/2-78-007a-1. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. August 1978.

U. S. Environmental Protection Agency. Equipment Leaks of VOC in Natural Gas Production Industry - Background Information for Promulgated Standards, EIS. EPA-450/3-82-024b. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. May 1985.

U. S. Environmental Protection Agency. Equipment Leaks of VOC in Natural Gas Production Industry - Background Information for Proposed Standards, Draft EIS. EPA-450/3-82-024a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. December 1983.

U. S. Environmental Protection Agency. Estimating Air Toxics Emissions From Organic Liquid Storage Tanks. EPA-450/4-88-004. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. October 1988.

U. S. Environmental Protection Agency. Evaluation of Emission Control Options at Leeds Architectural Products. EPA-450/3-89-001. Control Technology Center, Research Triangle Park, North Carolina. September 1989.

U. S. Environmental Protection Agency. Evaluation of Emission Sources At A Waferboard Manufacturing Plant. EPA-450/3-87-021. Control Technology Center, Research Triangle Park, North Carolina. September 1987.

U. S. Environmental Protection Agency. Evaluation of Potential Emissions from Creosote Wood Treatment Operations. EPA-450/3-89-028. Control Technology Center, Research Triangle Park, North Carolina. June 1989.

U. S. Environmental Protection Agency. Evaluation of Potential Emissions of TDI from Two Facilities. EPA-450/3-87-022. Control Technology Center, Research Triangle Park, North Carolina. October 1987.

U. S. Environmental Protection Agency. Final Standards Support And Environmental Impact Statement Volume II: Promulgated Standards of Performance For Lime Manufacturing Plants. EPA-450/2-77-007b. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. October 1977.

U. S. Environmental Protection Agency. Flexible Vinyl Coating and Printing Operations - Background Information for Proposed Standards, Draft EIS. EPA-450/3-81-016a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. January 1983.

U. S. Environmental Protection Agency. Flexible Vinyl and Urethane Coating and Printing - Background Information for Promulgated Standards, Final EIS. EPA-450/3-81-016b. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. June 1984.

U. S. Environmental Protection Agency. Fossil Fuel Fired Industrial Boilers - Background Information. Volume 2: Appendices, Draft EIS. EPA-450/3-82-006b. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. March 1982.

U. S. Environmental Protection Agency. Fugitive Emission Sources of Organic Compounds -- Additional Information on Emissions, Emission Reductions, and Costs. EPA-450/3-82-010. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. April 1982.

U. S. Environmental Protection Agency. Glass Manufacturing Plants - Background Information for Promulgated Standards of Performance, EIS. EPA-450/3-79-005b. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. September 1980.

U. S. Environmental Protection Agency. Industrial Surface Coating: Appliances - Background Information for Proposed Standards, Draft EIS. EPA-450/3-80-037a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. November 1980.

U. S. Environmental Protection Agency. Kraft Pulping - Control of TRS Emissions from Existing Mills. EPA-450/2-78-003b. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. March 1979.

U. S. Environmental Protection Agency. Lead-Acid Battery Manufacture - Background Information for Promulgated Standards, EIS. EPA-450/3-79-028b. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. November 1980.

U. S. Environmental Protection Agency. Lime Manufacturing Plants - Background Information for Promulgated Standards, EIS. EPA-450/3-84-008b Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. March 1984.

U. S. Environmental Protection Agency. Magnetic Tape Manufacturing Industry - Background Information for Promulgated Standards, Final EIS. EPA-450/3-85-029b. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. July 1988.

U. S. Environmental Protection Agency. Magnetic Tape Manufacturing Industry - Background Information for Proposed Standards, Draft EIS. EPA-450/3-85-029a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. December 1985.

U. S. Environmental Protection Agency. Metal Coil Surface Coating Industry - Background Information for Proposed Standards, Draft EIS. EPA-450/3-80-035a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. October 1980.

U. S. Environmental Protection Agency. Metallic Mineral Processing Plants - Background Information for Proposed Standards, Volume 1: Chapters 1 - 9. EPA-450/3-81-009a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. August 1982.

U. S. Environmental Protection Agency. Municipal Waste Combustors - Background Information for Proposed Standards: Post- Combustion Technology Performance. EPA-450/3-89-027c. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. August 1989.

U. S. Environmental Protection Agency. Nonfossil Fuel Fired Industrial Boilers - Background Information. EPA-450/3-82-007. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. March 1982.

U. S. Environmental Protection Agency. Non-Metallic Mineral Processing Plants - Background Information for Promulgated Standards, Final EIS. EPA-450/3-83-001b. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. April 1985.

U. S. Environmental Protection Agency. Nonmetallic Mineral Processing Plants - Background Information for Proposed Standards, Draft EIS. EPA-450/3-83-001a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. August 1983.

U. S. Environmental Protection Agency. Non-Metallic Mineral Processing Plants - Background Information for Proposed Emission Standards, Draft EIS. EPA-450/3-80-002a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. March 1980.

U. S. Environmental Protection Agency. Nonmetallic Mineral Processing Plants - Background Information for Proposed Standards, Draft EIS. EPA-450/3-83-001a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. August 1983.

U. S. Environmental Protection Agency. ORD Project Summary, A Method for Estimating Fugitive Particulate Emissions from Hazardous Waste Sites; J.H. Turner, M.R. Branscome and C.C. Allen. EPA-600/S2-87/006. HWERL, Cincinnati, Ohio. November 1987.

U. S. Environmental Protection Agency. ORD Project Summary, Asphaltic Concrete Industry - Source Category Report; J.S. Kinsey. EPA-600/S7-86/038. AEERL, Research Triangle Park, North Carolina. January 1987.

U. S. Environmental Protection Agency. ORD Project Summary, Assessment of Coal Cleaning Technology: Final Report; L.C. McCandless, A.B. Onursal and J.M. Moore. EPA-600/S7-86/037. AEERL, Research Triangle Park, North Carolina. February 1987.

U. S. Environmental Protection Agency. ORD Project Summary, Assessment of Organic Contaminants in Emissions from Refuse-Derived Fuel Combustion; J. Chrostowski, D. Wait, E. Kwong, A. Jeffries, C. Rodgers and N. Moseman. EPA-600/S2-85/115. HWERL, Cincinnati, Ohio. December 1985.

U. S. Environmental Protection Agency. ORD Project Summary, Benzene Continuous Emission Monitoring Systems for Gasoline Bulk Storage; J.N. Bolstad. EPA-600/S4-87/034. EMSL, Research Triangle Park, North Carolina. January 1988.

U. S. Environmental Protection Agency. ORD Project Summary, Characterization of Household Hazardous Waste from Marin County, California, and New Orleans, Louisiana; W.L. Rathje, D.C. Wilson, V.W. Lambou and R.C. Herndon. EPA-600/S4-87/025. EMSL, Las Vegas, Nevada. January 1988.

U. S. Environmental Protection Agency. ORD Project Summary, Critical Review of Open Source Particulate Emission Measurements: Field Comparison; B.E. Pyle and J.D. McCain. EPA-600/S2-86/072. AEERL, Research Triangle Park, North Carolina. January 1987.

U. S. Environmental Protection Agency. ORD Project Summary, Destruction of VOCs by a Catalytic Paint Drying (IR) Device; C.D. Cooper. EPA-600/S2-85/064. AEERL, Research Triangle Park, North Carolina. August 1985.

U. S. Environmental Protection Agency. ORD Project Summary, Development of the Fuel Choice Module in the Industrial Combustion Emissions Model; T. Hogan, J.L. Horowitz and T. Cook. EPA-600/S8-88/064. AEERL, Research Triangle Park, North Carolina. May 1988.

U. S. Environmental Protection Agency. ORD Project Summary, Dioxin Emissions from industrial Boilers Burning Hazardous Materials; C. Castaldini and R. Olexsey. EPA-600/S2-85/118. HWERL, Cincinnati, Ohio. September 1986.

U. S. Environmental Protection Agency. ORD Project Summary, Distribution of Trace Element Emissions from the Liquid Injection Incinerator Combustion Research Facility; J.W. Lee, R.W. Ross II, R.H. Vocque, J.W. Lewis and L.R. Waterland. EPA-600/S2-87/054. HWERL, Cincinnati, Ohio. September 1987.

U. S. Environmental Protection Agency. ORD Project Summary, 8th AESF/EPA Conference on Pollution Control for the Metal Finishing Industry; J.H. Schumacher, Jr. and R.C. Wilmouth. EPA-600/S9-87/012. WERL, Cincinnati, Ohio. September 1987.

U. S. Environmental Protection Agency. ORD Project Summary, Emissions Assessment for Refuse-Derived Fuel Combustion; B.W. Rising and J.M. Allen. EPA-600/S2-85/116. HWERL, Cincinnati, Ohio. December 1985.

U. S. Environmental Protection Agency. ORD Project Summary, Emissions Assessment for Refuse-Derived Fuel Combustion: Suspension Firing; J.K. Arand, L.J. Muzio and R.L. Barbour. EPA-600/S2-85/117. HWERL, Cincinnati, Ohio. December 1985.

U. S. Environmental Protection Agency. ORD Project Summary, Evaluation of Alternatives to Toxic Organic Paint Strippers; W. J. Hahn and P.O. Werschultz. EPA-600/S2-86/063. WERL, Cincinnati, Ohio. September 1986.

U. S. Environmental Protection Agency. ORD Project Summary, Evaluation of Perchloroethylene Emissions from Dry Cleaning Fabrics; B.A. Tichenor, L.E. Sparks and M.D. Jackson. EPA-600/S2-86/061. AEERL, Research Triangle Park, North Carolina. January 1989.

U. S. Environmental Protection Agency. ORD Project Summary, Evaluation of the Flux Chamber Method for Measuring Volatile Organic Emissions from Surface Impoundments; A. R. Gholson, J.R. Albritton and R.K.M. Jayanty. EPA-600/S3-89/008. AREAL, Research Triangle Park, North Carolina. September 1989.

U. S. Environmental Protection Agency. ORD Project Summary, Fate of Selected Metals and Emissions from a Sludge/Wastewater Gasifier; N.W. Sorbo, G. Tchobanoglous and J.D. Lucero. EPA-600/S2-85/135. HWERL, Cincinnati, Ohio. January 1986.

U. S. Environmental Protection Agency. ORD Project Summary, Ferroalloy Industry Particulate Emissions: Source Category Report; E.J. Limberakis, J. Vay and S. Gronberg. EPA-600/S7-86/039. AEERL, Research Triangle Park, North Carolina. March 1987.

U. S. Environmental Protection Agency. ORD Project Summary, Field Measurements of Full-Scale Hazardous Waste Treatment Facilities - Organic Solvent Wastes. EPA-600/S2-88/073. RREL, Cincinnati, Ohio. March 1989.

U. S. Environmental Protection Agency. ORD Project Summary, Hazardous/Toxic Air Pollutant Control Technology: A Literature Review; G. Shareef, A. Miles and B. Post. EPA-600/S2-84/194. AEERL, Research Triangle Park, North Carolina. January 1985.

U. S. Environmental Protection Agency. ORD Project Summary, Hazardous Waste Combustion in Industrial Processes: Cement and Lime Kilns; R.E. Mournighan and M. Branscome. EPA-600/S2-87/095. HWERL, Cincinnati, Ohio. February 1988.

U. S. Environmental Protection Agency. ORD Project Summary, Iron and Steel Industry Particulate Emissions: Source Category Report; J. Jeffery and J. Vay. EPA-600/S7-86/036. AEERL, Research Triangle Park, North Carolina. February 1987.

U. S. Environmental Protection Agency. ORD Project Summary, Lime and Cement Industry Particulate Emissions: Source Category Report, Volume II. Cement Industry; J.S. Kinsey. EPA-600/S7-87/007. AEERL, Research Triangle Park, North Carolina. May 1987.

U. S. Environmental Protection Agency. ORD Project Summary, Multimedia Pollution Assessment of the Wood Products Industries; J. Casana. EPA-600/S2-81/008. IERL, Cincinnati, Ohio. April 1984.

U. S. Environmental Protection Agency. ORD Project Summary, Organic Chemical Producers Data Base Development and Update; R. Soklow. EPA-600/S2-84/034. IERL, Cincinnati, Ohio. May 1984.

U. S. Environmental Protection Agency. ORD Project Summary, Organic Emissions from Ferrous Metallurgical industries: Compilation of Emission Factors and Control Technologies; R.L. Stallings. EPA-600/S2-84/003. IERL, Research Triangle Park, North Carolina. February 1984.

U. S. Environmental Protection Agency. ORD Project Summary, Particulate Emissions and Control in Fluidized-Bed Combustion: Modeling and Parametric Performance; A.Y. Ranadive, R.A. Newby and D.F. Ciliberti. EPA-600/S7-85/002. AEERL, Research Triangle Park, North Carolina. March 1985.

U. S. Environmental Protection Agency. ORD Project Summary, Preliminary Assessment of Air Emissions from Aerated Waste Treatment Systems at TSDFs; C.C. Allen, D.A. Green, J.B. White; and J.B. Coburn. EPA-600/S2-86/098. HWERL, Cincinnati, Ohio. January 1987.

U. S. Environmental Protection Agency. ORD Project Summary, Sampling and Analysis of Butadiene at a Synthetic Rubber Plant; J.D. Goodrich, W.G. DeWees and R.R. Segall. EPA-600/S3-89/004. AREAL, Research Triangle Park, North Carolina. July 1989.

U. S. Environmental Protection Agency. ORD Project Summary, Soil-Gas Measurement for Detection of Subsurface Organic Contamination; H.B. Kerfoot and L.J. Barrows. EPA-600/S2-87/027. EMSL, Las Vegas, Nevada. June 1987.

U. S. Environmental Protection Agency. ORD Project Summary, The NAPAP Utility Reference File for 1980; E.H. Pechan, J.J. Wilson Jr and K.K. Graves. EPA-600/S7-86/056. AEERL, Research Triangle Park, North Carolina. May 1987.

U. S. Environmental Protection Agency. ORD Project Summary, The Organic Dyes and Pigments Data Base; L. Swett, A. Twhigg and K.E. McCaleb. EPA-600/S2-84/032. IERL, Cincinnati, Ohio. May 1984.

U. S. Environmental Protection Agency. ORD Project Summary, Total Mass Emissions from a Hazardous Waste Incinerator; A. Trenholm, T. Lapp, G. Schell, J. Cootes, S. Klamm and C. Cassady. EPA-600/S2-87/064. HWERL, Cincinnati, Ohio. November 1987.

U. S. Environmental Protection Agency. ORD Project Summary, Toxic Organic Emissions from Synfuels and Related Industrial Wastewater Treatment Systems; F.A. Scheffel and F. J. Castaldi. EPA-600/S7-86/047. AEERL, Research Triangle Park, North Carolina. April 1987.

U. S. Environmental Protection Agency. ORD Project Summary, Trace Organics and Inorganics in Distribution and Marketing Municipal Sludges; R. Baird and S.M. Gabrielian. EPA-600/S1-88/001. HERL, Research Triangle Park, North Carolina. March 1988.

U. S. Environmental Protection Agency. ORD Project Summary, VOC Emission Factors for NAPAP Emission Inventory; J.H. Stelling, M.A. Bloomhardt and I.M. McKenzie. EPA-600/S7-86/052. AEERL, Research Triangle Park, North Carolina. March 1987.

U. S. Environmental Protection Agency. Organic Solvent Cleaners - Background Information for Proposed Standards, Draft EIS. EPA-450/2-78-045a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. October 1979.

U. S. Environmental Protection Agency. Perchloroethylene Dry Cleaners - Background Information for Proposed Standards, Draft EIS. EPA-450/3-79-029a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. August 1980.

U. S. Environmental Protection Agency. Portland Cement Plants - Background Information for Promulgated Revisions to Standards. EPA-450/3-85-003b. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. July 1988.

U. S. Environmental Protection Agency. Portland Cement Plants - Background Information for Proposed Revisions to Standards. EPA-450/3-85-003a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. May 1985.

U. S. Environmental Protection Agency. Petroleum Dry Cleaners - Background Information for Proposed Standards, Draft EIS. EPA-450/3-82-012a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. November 1982.

U. S. Environmental Protection Agency. Phosphate Rock Plants - Background Information for Promulgated Standards, EIS. EPA-450/3-79-017b. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. April 1982.

U. S. Environmental Protection Agency. Powder Coatings Technology Update. EPA-450/3-89-033. Control Technology Center, Research Triangle Park, North Carolina. October 1989.

U. S. Environmental Protection Agency. Pressure Sensitive Tape and Label Surface Coating Industry - Background Information for Proposed Standards, Draft EIS. EPA-450/3-80-003a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. September 1980.

U. S. Environmental Protection Agency. Pressure Sensitive Tape and Label Surface Coating Industry - Background Information for Promulgated Standards, Final EIS. EPA-450/3-80-003b. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. September 1983.

U. S. Environmental Protection Agency. Primary Aluminum - Background Information for Promulgated Amendments. EPA-450/3-79-026. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. March 1980.

U. S. Environmental Protection Agency. Primary Aluminum Draft Guidelines for Control of Fluoride Emissions from Existing Primary Aluminum Plants. EPA-450/2-78-049a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. February 1979.

U. S. Environmental Protection Agency. Publication Rotogravure Printing - Background Information for Proposed Standards, Draft EIS. EPA-450/3-80-031a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. October 1980.

U. S. Environmental Protection Agency. Publication Rotogravure Printing - Background Information for Proposed Standards, Final EIS. EPA-450/3-80-031b. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. October 1982.

U. S. Environmental Protection Agency. Reduction of Volatile Organic Compound Emissions from the Application of Traffic Markings. EPA-450/3-88-007. Control Technology Center, Research Triangle Park, North Carolina. August 1988.

U. S. Environmental Protection Agency. Reduction of Volatile Organic Compound Emissions from Automobile Refinishing. EPA-450/3-88-009. Control Technology Center, Research Triangle Park, North Carolina. October 1988.

U. S. Environmental Protection Agency. Review of New Source Performance Standards for Ammonium Sulfate Manufacture. EPA-450/3-85-004. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. February 1985.

U. S. Environmental Protection Agency. Review of New Source Performance Standards for Grain Elevators. EPA-450/3-84-001. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. January 1984.

U. S. Environmental Protection Agency. Review of New Source Performance Standards for Kraft Pulp Mills. EPA-450/3-83-017. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. September 1983.

U. S. Environmental Protection Agency. Review of New Source Performance Standards for Petroleum Refinery Claus Sulfur Recovery Plants. EPA-450/3-83-014. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. August 1983.

U. S. Environmental Protection Agency. Review of New Source Performance Standards for Secondary Brass and Bronze Plants. EPA-450/3-84-009. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. May 1984.

U. S. Environmental Protection Agency. Review of Standards of Performance for Electric Arc Furnaces in Steel Industry. EPA-450/3-79-033. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. October 1979.

U. S. Environmental Protection Agency. Revised Standards for Basic Oxygen Processes Furnaces - Background Information for Proposed Standards, Draft EIS. EPA-450/3-82-005a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. December 1982.

U. S. Environmental Protection Agency. Rubber Tire Manufacturing Industry - Background Information for Proposed Standards, Draft EIS. EPA-450/3-81-008a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. July 1981.

U. S. Environmental Protection Agency. Sodium Carbonate Industry - Background Information on Proposed Standards, Draft EIS. EPA-450/3-80-029a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. August 1980.

U. S. Environmental Protection Agency. Source Category Survey: Ammonia Manufacturing Industry. EPA-450/3-80-014. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. August 1980.

U. S. Environmental Protection Agency. Source Category Survey: Borax and Boric Acid Industry. EPA-450/3-80-004. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. March 1980.

U. S. Environmental Protection Agency. Source Category Survey: Ceramic Clay Industry. EPA-450/3-80-017. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. March 1980.

U. S. Environmental Protection Agency. Source Category Survey: Secondary Copper Smelting and Refining Industry. EPA-450/3-80-011. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. May 1980.

U. S. Environmental Protection Agency. Source Category Survey: Secondary Zinc Smelting and Refining Industry. EPA-450/3-80-012. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. May 1980.

U. S. Environmental Protection Agency. Source Category Survey: Thermal Process Phosphoric Acid Manufacturing Industry. EPA-450/3-80-018. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. May 1980.

U. S. Environmental Protection Agency. Source Characterization and Control Technology Assessment of Methylene Chloride Emissions From Eastman Kodak Company, Rochester, NY. EPA-600/2-89-043. Control Technology Center, Research Triangle Park, North Carolina. July 1989.

U. S. Environmental Protection Agency. Standard Support And Environmental Impact Statement: Emission Standard for Vinyl Chloride. EPA-450/2-75-009. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. October 1975.

U. S. Environmental Protection Agency. Standards Support Document: Promulgated Amendments to the National Emission Standard for Asbestos. EPA-450/2-78-030. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. June 1978.

U. S. Environmental Protection Agency. Standards Support And Environmental Impact Statement. Volume 2: Promulgated Standards Of Performance For Lignite-Fired Steam Generators. EPA-450/2-76-030b. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. November 1977.

U. S. Environmental Protection Agency. Standards Support And Environmental Impact Statement. Volume 2: Promulgated Emission Standard For Vinyl Chloride. EPA-450/2-75-009b. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. September 1976.

U. S. Environmental Protection Agency. Standards Support And Environmental Impact Statement. Volume 2: Promulgated Standards Of Performance For Grain Elevator Industry. EPA-450/2-77-001b. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. April 1978.

U. S. Environmental Protection Agency. Standards Support And Environmental Impact Statement. Volume 2: Promulgated Standards of Performance For Petroleum Refinery Sulfur Recovery Plants. EPA-450/2-76-016b. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. January 1978.

U. S. Environmental Protection Agency. Standards Support And Environmental Impact Statement. Volume 1: Proposed Standards Of Performance For Grain Elevator Industry. EPA-450/2-77-001a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. January 1977.

U. S. Environmental Protection Agency. Standards Support And Environmental Impact Statement. Volume 1: Proposed Standards Of Performance For Kraft Pulp Mills. EPA-450/2-76-014a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. September 1976.

U. S. Environmental Protection Agency. Standards Support And Environmental Impact Statement. Volume 1: Proposed Standards Of Performance For Lignite-Fired Steam Generators. EPA-450/2-76-030a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. December 1976.

U. S. Environmental Protection Agency. Standards Support And Environmental Impact Statement. Volume 1: Proposed Standards Of Performance For Stationary Gas Turbines. EPA-450/2-77-017a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. September 1977.

U. S. Environmental Protection Agency. Stationary Gas Turbines. Standard Support And Environmental Impact Statement. Volume 2: Promulgated Standards Of Performance, Final EIS. EPA-450/2-77-017b. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. September 1979.

U. S. Environmental Protection Agency. Stationary Internal Combustion Engines. Standards Support And Environmental Impact Statement. Volume 1: Proposed Standards Of Performance, Draft EIS. EPA-450/2-78-125a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. July 1979.

U. S. Environmental Protection Agency. Surface Coating Of Metal Furniture - Background Information for Promulgated Standards, Final EIS. EPA-450/3-80-007b. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. October 1982.

U. S. Environmental Protection Agency. Surface Coating Of Metal Furniture - Background Information for Proposed Standards, Draft EIS. EPA-450/3-80-007a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. September 1980.

U. S. Environmental Protection Agency. Surface Coating Of Plastic Parts For Business Machines - Background Information for Proposed Standards, Draft EIS. EPA-450/3-85-019a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. December 1985.

U. S. Environmental Protection Agency. Synthetic Fiber Production Facilities - Background Information for Promulgated Standards, Final EIS. EPA-450/3-82-011b. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. March 1984.

U. S. Environmental Protection Agency. Ultrasonic Cleaning of Rotogravure Cylinders. EPA-450/3-89-024. Control Technology Center, Research Triangle Park, North Carolina. June 1989.

U. S. Environmental Protection Agency. Vinyl Chloride - A Review Of National Emission Standards. EPA-450/3-82-003. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. February 1982.

U. S. Environmental Protection Agency. Vinyl Chloride: Relief Valve Standard. EPA-450/3-85-002. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. January 1985.

U. S. Environmental Protection Agency. VOC Emissions from Petroleum Refinery Wastewater Systems - Background Information for Promulgated Standards. EPA-450/3-85-001b. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. December 1987.

U. S. Environmental Protection Agency. VOC (Volatile Organic Compounds) Emissions from Petroleum Refinery Wastewater Systems - Background Information for Proposed Standards. EPA-450/3-85-001a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. February 1985.

U. S. Environmental Protection Agency. VOC Emissions from Volatile Organic Liquid Storage Tanks - Background Information for Proposed Standards. EPA-450/3-81-003a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. July 1984.

U. S. Environmental Protection Agency. VOC Fugitive Emissions in Synthetic Organic Chemicals Manufacturing Industry - Background Information for Proposed Standards, Draft EIS. EPA-450/3-80-033a. Office of Air Quality Planning and Standards, Research Triangle Park, North Carolina. November 1980.

APPENDIX D

SIC CODE DESCRIPTIONS

SIC	SIC Code Description
01	AGRICULTURAL PRODUCTION CROPS
011	Cash Grains
0111	Wheat
0112	Rice
0115	Corn
0116	Soybeans
0119	Cash grains, nec
013	Field Crops, Except Cash Grains
0131	Cotton
0132	Tobacco
0133	Sugarcane and sugar beets
0134	Irish potatoes
0139	Field crops, except cash grains, nec
016	Vegetables and Melons
0161	Vegetables and melons
017	Fruits and Tree Nuts
0171	Berry crops
0172	Grapes
0173	Tree nuts
0174	Citrus fruits
0175	Deciduous tree fruits
0179	Fruits and tree nuts, nec
018	Horticultural Specialties
0181	Ornamental nursery products
0182	Food crops grown under cover
019	General Farms, Primarily Crop
0191	General farms, primarily crop
02	AGRICULTURAL PRODUCTION LIVESTOCK
021	Livestock, Except Dairy and Poultry
0211	Beef cattle feedlots
0212	Beef cattle, except feedlots
0213	Hogs
0214	Sheep and goats
0219	General livestock, nec
024	Dairy Farms
0241	Dairy farms
025	Poultry and Eggs
0251	Broiler, fryer, and roaster chickens
0252	Chicken eggs
0253	Turkeys and turkey eggs
0254	Poultry hatcheries
0259	Poultry and eggs, nec
027	Animal Specialties
0271	Fur-bearing animals and rabbits
0272	Horses and other equines
0273	Animal aquaculture
0279	Animal specialties, nec
029	General Farms, Primarily Animal
0291	General farms, primarily animal
07	AGRICULTURAL SERVICES

SIC	SIC Code Description
071	Soil Preparation Services
0711	Soil preparation services
072	Crop Services
0721	Crop planting and protecting
0722	Crop harvesting
0723	Crop preparation services for market
0724	Cotton ginning
074	Veterinary Services
0741	Veterinary services for livestock
0742	Veterinary services, specialties
075	Animal Services, Except Veterinary
0751	Livestock services, exc. veterinary
0752	Animal specialty services
076	Farm Labor and Management Services
0761	Farm labor contractors
0762	Farm management services
078	Landscape and Horticultural Services
0781	Landscape counseling and planning
0782	Lawn and garden services
0783	Ornamental shrub and tree services
08	FORESTRY
081	Timber Tracts
0811	Timber tracts
083	Forest Products
0831	Forest products
085	Forestry Services
0851	Forestry services
09	FISHING, HUNTING, AND TRAPPING
091	Commercial Fishing
0912	Finfish
0913	Shellfish
0919	Miscellaneous marine products
092	Fish Hatcheries and Preserves
0921	Fish hatcheries and preserves
097	Hunting, Trapping, Game Propagation
0971	Hunting, trapping, game propagation
10	METAL MINING
101	Iron Ores
1011	Iron ores
102	Copper Ores
1021	Copper ores
103	Lead and Zinc Ores
1031	Lead and zinc ores
104	Gold and Silver Ores
1041	Gold ores
1044	Silver ores
106	Ferroalloy Ores, Except Vanadium
1061	Ferroalloy ores, except vanadium
108	Metal Mining Services
1081	Metal mining services

SIC	SIC Code Description
109	Miscellaneous Metal Ores
1094	Uranium-radium-vanadium ores
1099	Metal ores, nec
12	COAL MINING
122	Bituminous Coal and Lignite Mining
1221	Bituminous coal and lignite surface
1222	Bituminous coal underground
123	Anthracite Mining
1231	Anthracite mining
124	Coal Mining Services
1241	Coal mining services
13	OIL AND GAS EXTRACTION
131	Crude Petroleum and Natural Gas
1311	Crude petroleum and natural gas
132	Natural Gas Liquids
1321	Natural gas liquids
138	Oil and Gas Field Services
1381	Drilling oil and gas wells
1382	Oil and gas exploration services
1389	Oil and gas field services, nec
14	NONMETALLIC MINERALS, EXCEPT FUELS
141	Dimension Stone
1411	Dimension stone
142	Crushed and Broken Stone
1422	Crushed and broken limestone
1423	Crushed and broken granite
1429	Crushed and broken stone, nec
144	Sand and Gravel
1442	Construction sand and gravel
1446	Industrial sand
145	Clay, Ceramic, & Refractory Minerals
1455	Kaolin and ball clay
1459	Clay and related minerals, nec
147	Chemical and Fertilizer Minerals
1474	Potash, soda, and borate minerals
1475	Phosphate rock
1479	Chemical and fertilizer mining, nec
148	Nonmetallic Minerals Services
1481	Nonmetallic minerals services
149	Miscellaneous Nonmetallic Minerals
1499	Miscellaneous nonmetallic minerals
15	GENERAL BUILDING CONTRACTORS
152	Residential Building Construction
1521	Single-family housing construction
1522	Residential construction, nec
153	Operative Builders
1531	Operative builders
154	Nonresidential Building Construction
1541	Industrial buildings and warehouses
1542	Nonresidential construction, nec

SIC	SIC Code Description
16	HEAVY CONSTRUCTION, EX. BUILDING
161	Highway and Street Construction
1611	Highway and street construction
162	Heavy Construction, Except Highway
1622	Bridge, tunnel, & elevated highway
1623	Water, sewer, and utility lines
1629	Heavy construction, nec
17	SPECIAL TRADE CONTRACTORS
171	Plumbing, Heating, Air-Conditioning
1711	Plumbing, heating, air-conditioning
172	Painting and Paper Hanging
1721	Painting and paper hanging
173	Electrical Work
1731	Electrical work
174	Masonry, Stonework, and Plastering
1741	Masonry and other stonework
1742	Plastering, drywall, and insulation
1743	Terrazzo, tile, marble, mosaic work
175	Carpentry and Floor Work
1751	Carpentry work
1752	Floor laying and floor work, nec
176	Roofing, Siding, and Sheet Metal Work
1761	Roofing, siding, and sheet metal work
177	Concrete Work
1771	Concrete work
178	Water Well Drilling
1781	Water well drilling
179	Misc. Special Trade Contractors
1791	Structural steel erection
1793	Glass and glazing work
1794	Excavation work
1795	Wrecking and demolition work
1796	Installing building equipment, nec
1799	Special trade contractors, nec
20	FOOD AND KINDRED PRODUCTS
201	Meat Products
2011	Meat packing plants
2013	Sausages and other prepared meats
2015	Poultry slaughtering and processing
202	Dairy Products
2021	Creamery butter
2022	Cheese, natural and processed
2023	Dry, condensed, evaporated products
2024	Ice cream and frozen desserts
2026	Fluid milk
203	Preserved Fruits and Vegetables
2032	Canned specialties
2033	Canned fruits and vegetables
2034	Dehydrated fruits, vegetables, soups
2035	Pickles, sauces, and salad dressings

SIC	SIC Code Description
2037	Frozen fruits and vegetables
2038	Frozen specialties, nec
204	Grain Mill Products
2041	Flour and other grain mill products
2043	Cereal breakfast foods
2044	Rice milling
2045	Prepared flour mixes and doughs
2046	Wet corn milling
2047	Dog and cat food
2048	Prepared feeds, nec
205	Bakery Products
2051	Bread, cake, and related products
2052	Cookies and crackers
2053	Frozen bakery products, except bread
206	Sugar and Confectionery Products
2061	Raw cane sugar
2062	Cane sugar refining
2063	Beet sugar
2064	Candy & other confectionery products
2066	Chocolate and cocoa products
2067	Chewing gum
2068	Salted and roasted nuts and seeds
207	Fats and Oils
2074	Cottonseed oil mills
2075	Soybean oil mills
2076	Vegetable oil mills, nec
2077	Animal and marine fats and oils
2079	Edible fats and oils, nec
208	Beverages
2082	Malt beverages
2083	Malt
2084	Wines, brandy, and brandy spirits
2085	Distilled and blended liquors
2086	Bottled and canned soft drinks
2087	Flavoring extracts and syrups, nec
209	Misc. Food and Kindred Products
2091	Canned and cured fish and seafoods
2092	Fresh or frozen prepared fish
2095	Roasted coffee
2096	Potato chips and similar snacks
2097	Manufactured ice
2098	Macaroni and spaghetti
2099	Food preparations, nec
21	TOBACCO PRODUCTS
211	Cigarettes
2111	Cigarettes
212	Cigars
2121	Cigars
213	Chewing and Smoking Tobacco
2131	Chewing and smoking tobacco

SIC	SIC Code Description
214	Tobacco Stemming and Redrying
2141	Tobacco stemming and redrying
22	TEXTILE MILL PRODUCTS
221	Broadwoven Fabric Mills, Cotton
2211	Broadwoven fabric mills, cotton
222	Broadwoven Fabric Mills, Manmade
2221	Broadwoven fabric mills, manmade
223	Broadwoven Fabric Mills, Wool
2231	Broadwoven fabric mills, wool
224	Narrow Fabric Mills
2241	Narrow fabric mills
225	Knitting Mills
2251	Women's hosiery, except socks
2252	Hosiery, nec
2253	Knit outerwear mills
2254	Knit underwear mills
2257	Weft knit fabric mills
2258	Lace & warp knit fabric mills
2259	Knitting mills, nec
226	Textile Finishing, Except Wool
2261	Finishing plants, cotton
2262	Finishing plants, manmade
2269	Finishing plants, nec
227	Carpets and Rugs
2273	Carpets and rugs
228	Yarn and Thread Mills
2281	Yarn spinning mills
2282	Throwing and winding mills
2284	Thread mills
229	Miscellaneous Textile Goods
2295	Coated fabrics, not rubberized
2296	Tire cord and fabrics
2297	Nonwoven fabrics
2298	Cordage and twine
2299	Textile goods, nec
23	APPAREL AND OTHER TEXTILE PRODUCTS
231	Men's and Boys' Suits and Coats
2311	Men's and boys' suits and coats
232	Men's and Boys' Furnishings
2321	Men's and boys' shirts
2322	Men's & boys' underwear + nightwear
2323	Men's and boys' neckwear
2325	Men's and boys' trousers and slacks
2326	Men's and boys' work clothing
2329	Men's and boys' clothing, nec
233	Women's and Misses' Outerwear
2331	Women's & misses' blouses & shirts
2335	Women's, junior's, & misses' dresses
2337	Women's and misses' suits and coats
2339	Women's and misses' outerwear, nec

SIC	SIC Code Description
234	Women's and Children's Undergarments
2341	Women's and children's underwear
2342	Bras, girdles, and allied garments
235	Hats, Caps, and Millinery
2353	Hats, caps, and millinery
236	Girls' and Children's Outerwear
2361	Girls' & children's dresses, blouses
2369	Girls' and children's outerwear, nec
237	Fur Goods
2371	Fur goods
238	Miscellaneous Apparel and Accessories
2381	Fabric dress and work gloves
2384	Robes and dressing gowns
2385	Waterproof outerwear
2386	Leather and sheep-lined clothing
2387	Apparel belts
2389	Apparel and accessories, nec
239	Misc. Fabricated Textile Products
2391	Curtains and draperies
2392	Housefurnishings, nec
2393	Textile bags
2394	Canvas and related products
2395	Pleating and stitching
2396	Automotive and apparel trimmings
2397	Schiffli machine embroideries
2399	Fabricated textile products, nec
24	LUMBER AND WOOD PRODUCTS
241	Logging
2411	Logging
242	Sawmills and Planing Mills
2421	Sawmills and planing mills, general
2426	Hardwood dimension & flooring mills
2429	Special product sawmills, nec
243	Millwork, Plywood & Structural Members
2431	Millwork
2434	Wood kitchen cabinets
2435	Hardwood veneer and plywood
2436	Softwood veneer and plywood
2439	Structural wood members, nec
244	Wood Containers
2441	Nailed wood boxes and shook
2448	Wood pallets and skids
2449	Wood containers, nec
245	Wood Buildings and Mobile Homes
2451	Mobile homes
2452	Prefabricated wood buildings
249	Miscellaneous Wood Products
2491	Wood preserving
2493	Reconstituted wood products
2499	Wood products, nec

SIC	SIC Code Description
25	FURNITURE AND FIXTURES
251	Household Furniture
2511	Wood household furniture
2512	Upholstered household furniture
2514	Metal household furniture
2515	Mattresses and bedsprings
2517	Wood TV and radio cabinets
2519	Household furniture, nec
252	Office Furniture
2521	Wood office furniture
2522	Office furniture, except wood
253	Public Building & Related Furniture
2531	Public building & related furniture
254	Partitions and Fixtures
2541	Wood partitions and fixtures
2542	Partitions and fixtures, except wood
259	Miscellaneous Furniture and Fixtures
2591	Drapery hardware & blinds & shades
2599	Furniture and fixtures, nec
26	PAPER AND ALLIED PRODUCTS
261	Pulp Mills
2611	Pulp mills
262	Paper Mills
2621	Paper mills
263	Paperboard Mills
2631	Paperboard mills
265	Paperboard Containers and Boxes
2652	Setup paperboard boxes
2653	Corrugated and solid fiber boxes
2655	Fiber cans, drums & similar products
2656	Sanitary food containers
2657	Folding paperboard boxes
267	Misc. Converted Paper Products
2671	Paper coated & laminated, packaging
2672	Paper coated and laminated, nec
2673	Bags: plastics, laminated, & coated
2674	Bags: uncoated paper & multiwall
2675	Die-cut paper and board
2676	Sanitary paper products
2677	Envelopes
2678	Stationery products
2679	Converted paper products, nec
27	PRINTING AND PUBLISHING
271	Newspapers
2711	Newspapers
272	Periodicals
2721	Periodicals
273	Books
2731	Book publishing
2732	Book printing

SIC	SIC Code Description
274	Miscellaneous Publishing
2741	Miscellaneous publishing
275	Commercial Printing
2752	Commercial printing, lithographic
2754	Commercial printing, gravure
2759	Commercial printing, nec
276	Manifold Business Forms
2761	Manifold business forms
277	Greeting Cards
2771	Greeting cards
278	Blankbooks and Bookbinding
2782	Blankbooks and looseleaf binders
2789	Bookbinding and related work
279	Printing Trade Services
2791	Typesetting
2796	Platemaking services
28	CHEMICALS AND ALLIED PRODUCTS
281	Industrial Inorganic Chemicals
2812	Alkalies and chlorine
2813	Industrial gases
2816	Inorganic pigments
2819	Industrial inorganic chemicals, nec
282	Plastics Materials and Synthetics
2821	Plastics materials and resins
2822	Synthetic rubber
2823	Cellulosic manmade fibers
2824	Organic fibers, noncellulosic
283	Drugs
2833	Medicinals and botanicals
2834	Pharmaceutical preparations
2835	Diagnostic substances
2836	Biological products exc. diagnostic
284	Soap, Cleaners, and Toilet Goods
2841	Soap and other detergents
2842	Polishes and sanitation goods
2843	Surface active agents
2844	Toilet preparations
285	Paints and Allied Products
2851	Paints and allied products
286	Industrial Organic Chemicals
2861	Gum and wood chemicals
2865	Cyclic crudes and intermediates
2869	Industrial organic chemicals, nec
287	Agricultural Chemicals
2873	Nitrogenous fertilizers
2874	Phosphatic fertilizers
2875	Fertilizers, mixing only
2879	Agricultural chemicals, nec
289	Miscellaneous Chemical Products
2891	Adhesives and sealants

SIC	SIC Code Description
2892	Explosives
2893	Printing ink
2895	Carbon black
2899	Chemical preparations, nec
29	PETROLEUM AND COAL PRODUCTS
291	Petroleum Refining
2911	Petroleum refining
295	Asphalt Paving and Roofing Materials
2951	Asphalt paving mixtures and blocks
2952	Asphalt felts and coatings
299	Misc. Petroleum and Coal Products
2992	Lubricating oils and greases
2999	Petroleum and coal products, nec
30	RUBBER AND MISC. PLASTICS PRODUCTS
301	Tires and Inner Tubes
3011	Tires and inner tubes
302	Rubber and Plastics Footwear
3021	Rubber and plastics footwear
305	Hose & Belting & Gaskets & Packing
3052	Rubber & plastics hose & belting
3053	Gaskets, packing and sealing devices
306	Fabricated Rubber Products, NEC
3061	Mechanical rubber goods
3069	Fabricated rubber products, nec
308	Miscellaneous Plastics Products, NEC
3081	Unsupported plastics film & sheet
3082	Unsupported plastics profile shapes
3083	Laminated plastics plate & sheet
3084	Plastics pipe
3085	Plastics bottles
3086	Plastics foam products
3087	Custom compound purchased resins
3088	Plastics plumbing fixtures
3089	Plastics products, nec
31	LEATHER AND LEATHER PRODUCTS
311	Leather Tanning and Finishing
3111	Leather tanning and finishing
313	Footwear Cut Stock
3131	Footwear cut stock
314	Footwear, Except Rubber
3142	House slippers
3143	Men's footwear, except athletic
3144	Women's footwear, except athletic
3149	Footwear, except rubber, nec
315	Leather Gloves and Mittens
3151	Leather gloves and mittens
316	Luggage
3161	Luggage
317	Handbags and Personal Leather Goods
3171	Women's handbags and purses

SIC	SIC Code Description
3172	Personal leather goods, nec
319	Leather Goods, NEC
3199	Leather goods, nec
32	STONE, CLAY, AND GLASS PRODUCTS
321	Flat Glass
3211	Flat glass
322	Glass and Glassware, Pressed or Blown
3221	Glass containers
3229	Pressed and blown glass, nec
323	Products of Purchased Glass
3231	Products of purchased glass
324	Cement, Hydraulic
3241	Cement, hydraulic
325	Structural Clay Products
3251	Brick and structural clay tile
3253	Ceramic wall and floor tile
3255	Clay refractories
3259	Structural clay products, nec
326	Pottery and Related Products
3261	Vitreous plumbing fixtures
3262	Vitreous china table & kitchenware
3263	Semivitreous table & kitchenware
3264	Porcelain electrical supplies
3269	Pottery products, nec
327	Concrete, Gypsum, and Plaster Products
3271	Concrete block and brick
3272	Concrete products, nec
3273	Ready-mixed concrete
3274	Lime
3275	Gypsum products
328	Cut Stone and Stone Products
3281	Cut stone and stone products
329	Misc. Nonmetallic Mineral Products
3291	Abrasive products
3292	Asbestos products
3295	Minerals, ground or treated
3296	Mineral wool
3297	Nonclay refractories
3299	Nonmetallic mineral products, nec
33	PRIMARY METAL INDUSTRIES
331	Blast Furnace and Basic Steel Products
3312	Blast furnaces and steel mills
3313	Electrometallurgical products
3315	Steel wire and related products
3316	Cold finishing of steel shapes
3317	Steel pipe and tubes
332	Iron and Steel Foundries
3321	Gray and ductile iron foundries
3322	Malleable iron foundries
3324	Steel investment foundries

SIC	SIC Code Description
3325	Steel foundries, nec
333	Primary Nonferrous Metals
3331	Primary copper
3334	Primary aluminum
3339	Primary nonferrous metals, nec
334	Secondary Nonferrous Metals
3341	Secondary nonferrous metals
335	Nonferrous Rolling and Drawing
3351	Copper rolling and drawing
3353	Aluminum sheet, plate, and foil
3354	Aluminum extruded products
3355	Aluminum rolling and drawing, nec
3356	Nonferrous rolling and drawing, nec
3357	Nonferrous wiredrawing & insulating
336	Nonferrous Foundries (Castings)
3363	Aluminum die-castings
3364	Nonferrous die-casting exc. aluminum
3365	Aluminum foundries
3366	Copper foundries
3369	Nonferrous foundries, nec
339	Miscellaneous Primary Metal Products
3398	Metal heat treating
3399	Primary metal products, nec
34	FABRICATED METAL PRODUCTS
341	Metal Cans and Shipping Containers
3411	Metal cans
3412	Metal barrels, drums, and pails
342	Cutlery, Handtools, and Hardware
3421	Cutlery
3423	Hand and edge tools, nec
3425	Saw blades and bandsaws
3429	Hardware, nec
343	Plumbing and Heating, Except Electric
3431	Metal sanitary ware
3432	Plumbing fixture fittings and trim
3433	Heating equipment, except electric
344	Fabricated Structural Metal Products
3441	Fabricated structural metal
3442	Metal doors, sash, and trim
3443	Fabricated plate work (boiler shops)
3444	Sheet metalwork
3446	Architectural metal work
3448	Prefabricated metal buildings
3449	Miscellaneous metal work
345	Screw Machine Products, Bolts, Etc.
3451	Screw machine products
3452	Bolts, nuts, rivets, and washers
346	Metal Forgings and Stampings
3462	Iron and steel forgings
3463	Nonferrous forgings

SIC	SIC Code Description
3465	Automotive stampings
3466	Crowns and closures
3469	Metal stampings, nec
347	Metal Services, NEC
3471	Plating and polishing
3479	Metal coating and allied services
348	Ordnance and Accessories, NEC
3482	Small arms ammunition
3483	Ammunition, exc. for small arms, nec
3484	Small arms
3489	Ordnance and accessories, nec
349	Misc. Fabricated Metal Products
3491	Industrial valves
3492	Fluid power valves & hose fittings
3493	Steel springs, except wire
3494	Valves and pipe fittings, nec
3495	Wire springs
3496	Misc. fabricated wire products
3497	Metal foil and leaf
3498	Fabricated pipe and fittings
3499	Fabricated metal products, nec
35	INDUSTRIAL MACHINERY AND EQUIPMENT
351	Engines and Turbines
3511	Turbines and turbine generator sets
3519	Internal combustion engines, nec
352	Farm and Garden Machinery
3523	Farm machinery and equipment
3524	Lawn and garden equipment
353	Construction and Related Machinery
3531	Construction machinery
3532	Mining machinery
3533	Oil and gas field machinery
3534	Elevators and moving stairways
3535	Conveyors and conveying equipment
3536	Hoists, cranes, and monorails
3537	Industrial trucks and tractors
354	Metalworking Machinery
3541	Machine tools, metal cutting types
3542	Machine tools, metal forming types
3543	Industrial patterns
3544	Special dies, tools, jigs & fixtures
3545	Machine tool accessories
3546	Power-driven handtools
3547	Rolling mill machinery
3548	Welding apparatus
3549	Metalworking machinery, nec
355	Special Industry Machinery
3552	Textile machinery
3553	Woodworking machinery
3554	Paper industries machinery

SIC	SIC Code Description
3555	Printing trades machinery
3556	Food products machinery
3559	Special industry machinery, nec
356	General Industrial Machinery
3561	Pumps and pumping equipment
3562	Ball and roller bearings
3563	Air and gas compressors
3564	Blowers and fans
3565	Packaging machinery
3566	Speed changers, drives, and gears
3567	Industrial furnaces and ovens
3568	Power transmission equipment, nec
3569	General industrial machinery, nec
357	Computer and Office Equipment
3571	Electronic computers
3572	Computer storage devices
3575	Computer terminals
3577	Computer peripheral equipment, nec
3578	Calculating and accounting equipment
3579	Office machines, nec
358	Refrigeration and Service Machinery
3581	Automatic vending machines
3582	Commercial laundry equipment
3585	Refrigeration and heating equipment
3586	Measuring and dispensing pumps
3589	Service industry machinery, nec
359	Industrial Machinery, NEC
3592	Carburetors, pistons, rings, valves
3593	Fluid power cylinders & actuators
3594	Fluid power pumps and motors
3596	Scales and balances, exc. laboratory
3599	Industrial machinery, nec
36	ELECTRONIC & OTHER ELECTRIC EQUIPMENT
361	Electric Distribution Equipment
3612	Transformers, except electronic
3613	Switchgear and switchboard apparatus
362	Electrical Industrial Apparatus
3621	Motors and generators
3624	Carbon and graphite products
3625	Relays and industrial controls
3629	Electrical industrial apparatus, nec
363	Household Appliances
3631	Household cooking equipment
3632	Household refrigerators and freezers
3633	Household laundry equipment
3634	Electric housewares and fans
3635	Household vacuum cleaners
3639	Household appliances, nec
364	Electric Lighting and Wiring Equipment
3641	Electric lamps

SIC	SIC Code Description
3643	Current-carrying wiring devices
3644	Noncurrent-carrying wiring devices
3645	Residential lighting fixtures
3646	Commercial lighting fixtures
3647	Vehicular lighting equipment
3648	Lighting equipment, nec
365	Household Audio and Video Equipment
3651	Household audio and video equipment
3652	Prerecorded records and tapes
366	Communications Equipment
3661	Telephone and telegraph apparatus
3663	Radio & TV communications equipment
3669	Communications equipment, nec
367	Electronic Components and Accessories
3671	Electron tubes
3672	Printed circuit boards
3674	Semiconductors and related devices
3675	Electronic capacitors
3676	Electronic resistors
3677	Electronic coils and transformers
3678	Electronic connectors
3679	Electronic components, nec
369	Misc. Electrical Equipment & Supplies
3691	Storage batteries
3692	Primary batteries, dry and wet
3694	Engine electrical equipment
3695	Magnetic and optical recording media
3699	Electrical equipment & supplies, nec
37	TRANSPORTATION EQUIPMENT
371	Motor Vehicles and Equipment
3711	Motor vehicles and car bodies
3713	Truck and bus bodies
3714	Motor vehicle parts and accessories
3715	Truck trailers
3716	Motor homes
372	Aircraft and Parts
3721	Aircraft
3724	Aircraft engines and engine parts
3728	Aircraft parts and equipment, nec
373	Ship and Boat Building and Repairing
3731	Ship building and repairing
3732	Boat building and repairing
374	Railroad Equipment
3743	Railroad equipment
375	Motorcycles, Bicycles, and Parts
3751	Motorcycles, bicycles, and parts
376	Guided Missiles, Space Vehicles, Parts
3761	Guided missiles and space vehicles
3764	Space propulsion units and parts
3769	Space vehicle equipment, nec

SIC	SIC Code Description
379	Miscellaneous Transportation Equipment
3792	Travel trailers and campers
3795	Tanks and tank components
3799	Transportation equipment, nec
38	INSTRUMENTS AND RELATED PRODUCTS
381	Search and Navigation Equipment
3812	Search and navigation equipment
382	Measuring and Controlling Devices
3821	Laboratory apparatus and furniture
3822	Environmental controls
3823	Process control instruments
3824	Fluid meters and counting devices
3825	Instruments to measure electricity
3826	Analytical instruments
3827	Optical instruments and lenses
3829	Measuring & controlling devices, nec
384	Medical Instruments and Supplies
3841	Surgical and medical instruments
3842	Surgical appliances and supplies
3843	Dental equipment and supplies
3844	X-ray apparatus and tubes
3845	Electromedical equipment
385	Ophthalmic Goods
3851	Ophthalmic goods
386	Photographic Equipment and Supplies
3861	Photographic equipment and supplies
387	Watches, Clocks, Watchcases & Parts
3873	Watches, clocks, watchcases & parts
39	MISCELLANEOUS MANUFACTURING INDUSTRIES
391	Jewelry, Silverware, and Plated Ware
3911	Jewelry, precious metal
3914	Silverware and plated ware
3915	Jewelers' materials & lapidary work
393	Musical Instruments
3931	Musical instruments
394	Toys and Sporting Goods
3942	Dolls and stuffed toys
3944	Games, toys, and children's vehicles
3949	Sporting and athletic goods, nec
395	Pens, Pencils, Office, & Art Supplies
3951	Pens and mechanical pencils
3952	Lead pencils and art goods
3953	Marking devices
3955	Carbon paper and inked ribbons
396	Costume Jewelry and Notions
3961	Costume jewelry
3965	Fasteners, buttons, needles, & pins
399	Miscellaneous Manufactures
3991	Brooms and brushes
3993	Signs and advertising specialities

SIC	SIC Code Description
3995	Burial caskets
3996	Hard surface floor coverings, nec
3999	Manufacturing industries, nec
40	RAILROAD TRANSPORTATION
401	Railroads
4011	Railroads, line-haul operating
4013	Switching and terminal services
41	LOCAL AND INTERURBAN PASSENGER TRANSIT
411	Local and Suburban Transportation
4111	Local and suburban transit
4119	Local passenger transportation, nec
412	Taxicabs
4121	Taxicabs
413	Intercity and Rural Bus Transportation
4131	Intercity & rural bus transportation
414	Bus Charter Service
4141	Local bus charter service
4142	Bus charter service, except local
415	School Buses
4151	School buses
417	Bus Terminal and Service Facilities
4173	Bus terminal and service facilities
42	TRUCKING AND WAREHOUSING
421	Trucking & Courier Services, Ex. Air
4212	Local trucking, without storage
4213	Trucking, except local
4214	Local trucking with storage
4215	Courier services, except by air
422	Public Warehousing and Storage
4221	Farm product warehousing and storage
4222	Refrigerated warehousing and storage
4225	General warehousing and storage
4226	Special warehousing and storage, nec
423	Trucking Terminal Facilities
4231	Trucking terminal facilities
43	U.S. POSTAL SERVICE
431	U.S. Postal Service
4311	U.S. Postal Service
44	WATER TRANSPORTATION
441	Deep Sea Foreign Trans. of Freight
4412	Deep sea foreign trans. of freight
442	Deep Sea Domestic Trans. of Freight
4424	Deep sea domestic trans. of freight
443	Freight Trans. on the Great Lakes
4432	Freight trans. on the Great Lakes
444	Water Transportation of Freight, NEC
4449	Water transportation of freight, nec
448	Water Transportation of Passengers
4481	Deep sea passenger trans., ex. ferry
4482	Ferries

SIC	SIC Code Description
4489	Water passenger transportation, nec
449	Water Transportation Services
4491	Marine cargo handling
4492	Towing and tugboat service
4493	Marinas
4499	Water transportation services, nec
45	TRANSPORTATION BY AIR
451	Air Transportation, Scheduled
4512	Air transportation, scheduled
4513	Air courier services
452	Air Transportation, Nonscheduled
4522	Air transportation, nonscheduled
458	Airports, Flying Fields, & Services
4581	Airports, flying fields, & services
46	PIPELINES, EXCEPT NATURAL GAS
461	Pipelines, Except Natural Gas
4612	Crude petroleum pipelines
4613	Refined petroleum pipelines
4619	Pipelines, nec
47	TRANSPORTATION SERVICES
472	Passenger Transportation Arrangement
4724	Travel agencies
4725	Tour operators
4729	Passenger transport arrangement, nec
473	Freight Transportation Arrangement
4731	Freight transportation arrangement
474	Rental of Railroad Cars
4741	Rental of railroad cars
478	Miscellaneous Transportation Services
4783	Packing and crating
4785	Inspection & fixed facilities
4789	Transportation services, nec
48	COMMUNICATION
481	Telephone Communication
4812	Radiotelephone communications
4813	Telephone communications, exc. radio
482	Telegraph & Other Communications
4822	Telegraph & other communications
483	Radio and Television Broadcasting
4832	Radio broadcasting stations
4833	Television broadcasting stations
484	Cable and Other Pay TV Services
4841	Cable and other pay TV services
489	Communication Services, NEC
4899	Communication services, nec
49	ELECTRIC, GAS, AND SANITARY SERVICES
491	Electric Services
4911	Electric services
492	Gas Production and Distribution
4922	Natural gas transmission

SIC	SIC Code Description
4923	Gas transmission and distribution
4924	Natural gas distribution
4925	Gas production and/or distribution
493	Combination Utility Services
4931	Electric and other services combined
4932	Gas and other services combined
4939	Combination utilities, nec
494	Water Supply
4941	Water supply
495	Sanitary Services
4952	Sewerage systems
4953	Refuse systems
4959	Sanitary services, nec
496	Steam and Air-Conditioning Supply
4961	Steam and air-conditioning supply
497	Irrigation Systems
4971	Irrigation systems
50	WHOLESALE TRADE DURABLE GOODS
501	Motor Vehicles, Parts, and Supplies
5012	Automobiles and other motor vehicles
5013	Motor vehicle supplies and new parts
5014	Tires and tubes
5015	Motor vehicle parts, used
502	Furniture and Homefurnishings
5021	Furniture
5023	Homefurnishings
503	Lumber and Construction Materials
5031	Lumber, plywood, and millwork
5032	Brick, stone, & related materials
5033	Roofing, siding, & insulation
5039	Construction materials, nec
504	Professional & Commercial Equipment
5043	Photographic equipment and supplies
5044	Office equipment
5045	Computers, peripherals & software
5046	Commercial equipment, nec
5047	Medical and hospital equipment
5048	Ophthalmic goods
5049	Professional equipment, nec
505	Metals and Minerals, Except Petroleum
5051	Metals service centers and offices
5052	Coal and other minerals and ores
506	Electrical Goods
5063	Electrical apparatus and equipment
5064	Electrical appliances, TV & radios
5065	Electronic parts and equipment
507	Hardware, Plumbing & Heating Equipment
5072	Hardware
5074	Plumbing & hydronic heating supplies
5075	Warm air heating & air-conditioning

SIC	SIC Code Description
5078	Refrigeration equipment and supplies
508	Machinery, Equipment, and Supplies
5082	Construction and mining machinery
5083	Farm and garden machinery
5084	Industrial machinery and equipment
5085	Industrial supplies
5087	Service establishment equipment
5088	Transportation equipment & supplies
509	Miscellaneous Durable Goods
5091	Sporting & recreational goods
5092	Toys and hobby goods and supplies
5093	Scrap and waste materials
5094	Jewelry & precious stones
5099	Durable goods, nec
51	WHOLESALE TRADE NONDURABLE GOODS
511	Paper and Paper Products
5111	Printing and writing paper
5112	Stationery and office supplies
5113	Industrial & personal service paper
512	Drugs, Proprietaries, and Sundries
5122	Drugs, proprietaries, and sundries
513	Apparel, Piece Goods, and Notions
5131	Piece goods & notions
5136	Men's and boys' clothing
5137	Women's and children's clothing
5139	Footwear
514	Groceries and Related Products
5141	Groceries, general line
5142	Packaged frozen foods
5143	Dairy products, exc. dried or canned
5144	Poultry and poultry products
5145	Confectionery
5146	Fish and seafoods
5147	Meats and meat products
5148	Fresh fruits and vegetables
5149	Groceries and related products, nec
515	Farm-Product Raw Materials
5153	Grain and field beans
5154	Livestock
5159	Farm-product raw materials, nec
516	Chemicals and Allied Products
5162	Plastics materials & basic shapes
5169	Chemicals & allied products, nec
517	Petroleum and Petroleum Products
5171	Petroleum bulk stations & terminals
5172	Petroleum products, nec
518	Beer, Wine, and Distilled Beverages
5181	Beer and ale
5182	Wine and distilled beverages
519	Misc. Nondurable Goods

SIC	SIC Code Description
5191	Farm supplies
5192	Books, periodicals, & newspapers
5193	Flowers & florists' supplies
5194	Tobacco and tobacco products
5198	Paints, varnishes, and supplies
5199	Nondurable goods, nec
52	BUILDING MATERIALS & GARDEN SUPPLIES
521	Lumber and Other Building Materials
5211	Lumber and other building materials
523	Paint, Glass, and Wallpaper Stores
5231	Paint, glass, and wallpaper stores
525	Hardware Stores
5251	Hardware stores
526	Retail Nurseries and Garden Stores
5261	Retail nurseries and garden stores
527	Mobile Home Dealers
5271	Mobile home dealers
53	GENERAL MERCHANDISE STORES
531	Department Stores
5311	Department stores
533	Variety Stores
5331	Variety stores
539	Misc. General Merchandise Stores
5399	Misc. general merchandise stores
54	FOOD STORES
541	Grocery Stores
5411	Grocery stores
542	Meat and Fish Markets
5421	Meat and fish markets
543	Fruit and Vegetable Markets
5431	Fruit and vegetable markets
544	Candy, Nut, and Confectionery Stores
5441	Candy, nut, and confectionery stores
545	Dairy Products Stores
5451	Dairy products stores
546	Retail Bakeries
5461	Retail bakeries
549	Miscellaneous Food Stores
5499	Miscellaneous food stores
55	AUTOMOTIVE DEALERS & SERVICE STATIONS
551	New and Used Car Dealers
5511	New and used car dealers
552	Used Car Dealers
5521	Used car dealers
553	Auto and Home Supply Stores
5531	Auto and home supply stores
554	Gasoline Service Stations
5541	Gasoline service stations
555	Boat Dealers
5551	Boat dealers

SIC	SIC Code Description
556	Recreational Vehicle Dealers
5561	Recreational vehicle dealers
557	Motorcycle Dealers
5571	Motorcycle dealers
559	Automotive Dealers, NEC
5599	Automotive dealers, nec
56	APPAREL AND ACCESSORY STORES
561	Men's & Boys' Clothing Stores
5611	Men's & boys' clothing stores
562	Women's Clothing Stores
5621	Women's clothing stores
563	Women's Accessory & Specialty Stores
5632	Women's accessory & specialty stores
564	Children's and Infants' Wear Stores
5641	Children's and infants' wear stores
565	Family Clothing Stores
5651	Family clothing stores
566	Shoe Stores
5661	Shoe stores
569	Misc. Apparel & Accessory Stores
5699	Misc. apparel & accessory stores
57	FURNITURE AND HOMEFURNISHINGS STORES
571	Furniture and Homefurnishings Stores
5712	Furniture stores
5713	Floor covering stores
5714	Drapery and upholstery stores
5719	Misc. homefurnishings stores
572	Household Appliance Stores
5722	Household appliance stores
573	Radio, Television, & Computer Stores
5731	Radio, TV, & electronic stores
5734	Computer and software stores
5735	Record & prerecorded tape stores
5736	Musical instrument stores
58	EATING AND DRINKING PLACES
581	Eating and Drinking Places
5812	Eating places
5813	Drinking places
59	MISCELLANEOUS RETAIL
591	Drug Stores and Proprietary Stores
5912	Drug stores and proprietary stores
592	Liquor Stores
5921	Liquor stores
593	Used Merchandise Stores
5932	Used merchandise stores
594	Miscellaneous Shopping Goods Stores
5941	Sporting goods and bicycle shops
5942	Book stores
5943	Stationery stores
5944	Jewelry stores

SIC	SIC Code Description
5945	Hobby, toy, and game shops
5946	Camera & photographic supply stores
5947	Gift, novelty, and souvenir shops
5948	Luggage and leather goods stores
5949	Sewing, needlework, and piece goods
596	Nonstore Retailers
5961	Catalog and mail-order houses
5962	Merchandising machine operators
5963	Direct selling establishments
598	Fuel Dealers
5983	Fuel oil dealers
5984	Liquefied petroleum gas dealers
5989	Fuel dealers, nec
599	Retail Stores, NEC
5992	Florists
5993	Tobacco stores and stands
5994	News dealers and newsstands
5995	Optical goods stores
5999	Miscellaneous retail stores, nec
60	DEPOSITORY INSTITUTIONS
601	Central Reserve Depository
6011	Federal reserve banks
6019	Central reserve depository, nec
602	Commercial Banks
6021	National commercial banks
6022	State commercial banks
6029	Commercial banks, nec
603	Savings Institutions
6035	Federal savings institutions
6036	Savings institutions, except federal
606	Credit Unions
6061	Federal credit unions
6062	State credit unions
608	Foreign Bank & Branches + Agencies
6081	Foreign bank & branches & agencies
6082	Foreign trade & international banks
609	Functions Closely Related to Banking
6091	Nondeposit trust facilities
6099	Functions related to deposit banking
61	NONDEPOSITORY INSTITUTIONS
611	Federal & Fed.-Sponsored Credit
6111	Federal & fed.-sponsored credit
614	Personal Credit Institutions
6141	Personal credit institutions
615	Business Credit Institutions
6153	Short-term business credit
6159	Misc. business credit institutions
616	Mortgage Bankers and Brokers
6162	Mortgage bankers and correspondents
6163	Loan brokers

SIC	SIC Code Description
62	SECURITY AND COMMODITY BROKERS
621	Security Brokers and Dealers
6211	Security brokers and dealers
622	Commodity Contracts Brokers, Dealers
6221	Commodity contracts brokers, dealers
623	Security and Commodity Exchanges
6231	Security and commodity exchanges
628	Security and Commodity Services
6282	Investment advice
6289	Security & commodity services, nec
63	INSURANCE CARRIERS
631	Life Insurance
6311	Life insurance
632	Medical Service and Health Insurance
6321	Accident and health insurance
6324	Hospital and medical service plans
633	Fire, Marine, and Casualty Insurance
6331	Fire, marine, and casualty insurance
635	Surety Insurance
6351	Surety insurance
636	Title Insurance
6361	Title insurance
637	Pension, Health, and Welfare Funds
6371	Pension, health, and welfare funds
639	Insurance Carriers, NEC
6399	Insurance carriers, nec
64	INSURANCE AGENTS, BROKERS, & SERVICE
641	Insurance Agents, Brokers, & Service
6411	Insurance agents, brokers, & service
65	REAL ESTATE
651	Real Estate Operators and Lessors
6512	Nonresidential building operators
6513	Apartment building operators
6514	Dwelling operators, exc. apartments
6515	Mobile home site operators
6517	Railroad property lessors
6519	Real property lessors, nec
653	Real Estate Agents and Managers
6531	Real estate agents and managers
654	Title Abstract Offices
6541	Title abstract offices
655	Subdividers and Developers
6552	Subdividers and developers, nec
6553	Cemetery subdividers and developers
67	HOLDING AND OTHER INVESTMENT OFFICES
671	Holding Offices
6712	Bank holding companies
6719	Holding companies, nec
672	Investment Offices
6722	Management investment, open-end

SIC	SIC Code Description
6726	Investment offices, nec
673	Trusts
6732	Educational, religious, etc. trusts
6733	Trusts, nec
679	Miscellaneous Investing
6792	Oil royalty traders
6794	Patent owners and lessors
6798	Real estate investment trusts
6799	Investors, nec
70	HOTELS AND OTHER LODGING PLACES
701	Hotels and Motels
7011	Hotels and motels
702	Rooming and Boarding Houses
7021	Rooming and boarding houses
703	Camps and Recreational Vehicle Parks
7032	Sporting and recreational camps
7033	Trailer parks and campsites
704	Membership-Basis Organization Hotels
7041	Membership-basis organization hotels
72	PERSONAL SERVICES
721	Laundry, Cleaning, & Garment Services
7211	Power laundries, family & commercial
7212	Garment pressing & cleaners' agents
7213	Linen supply
7215	Coin-operated laundries and cleaning
7216	Drycleaning plants, except rug
7217	Carpet and upholstery cleaning
7218	Industrial launderers
7219	Laundry and garment services, nec
722	Photographic Studios, Portrait
7221	Photographic studios, portrait
723	Beauty Shops
7231	Beauty shops
724	Barber Shops
7241	Barber shops
725	Shoe Repair and Shoeshine Parlors
7251	Shoe repair and shoeshine parlors
726	Funeral Service and Crematories
7261	Funeral service and crematories
729	Miscellaneous Personal Services
7291	Tax return preparation services
7299	Miscellaneous personal services, nec
73	BUSINESS SERVICES
731	Advertising
7311	Advertising agencies
7312	Outdoor advertising services
7313	Radio, TV, publisher representatives
7319	Advertising, nec
732	Credit Reporting and Collection
7322	Adjustment & collection services

SIC	SIC Code Description
7323	Credit reporting services
733	Mailing, Reproduction, Stenographic
7331	Direct mail advertising services
7334	Photocopying & duplicating services
7335	Commercial photography
7336	Commercial art and graphic design
7338	Secretarial & court reporting
734	Services to Buildings
7342	Disinfecting & pest control services
7349	Building maintenance services, nec
735	Misc. Equipment Rental & Leasing
7352	Medical equipment rental
7353	Heavy construction equipment rental
7359	Equipment rental & leasing, nec
736	Personnel Supply Services
7361	Employment agencies
7363	Help supply services
737	Computer and Data Processing Services
7371	Computer programming services
7372	Prepackaged software
7373	Computer integrated systems design
7374	Data processing and preparation
7375	Information retrieval services
7376	Computer facilities management
7377	Computer rental & leasing
7378	Computer maintenance & repair
7379	Computer related services, nec
738	Miscellaneous Business Services
7381	Detective & armored car services
7382	Security systems services
7383	News syndicates
7384	Photofinishing laboratories
7389	Business services, nec
75	AUTO REPAIR, SERVICES, AND PARKING
751	Automotive Rentals, No Drivers
7513	Truck rental and leasing, no drivers
7514	Passenger car rental
7515	Passenger car leasing
7519	Utility trailer rental
752	Automobile Parking
7521	Automobile parking
753	Automotive Repair Shops
7532	Top & body repair & paint shops
7533	Auto exhaust system repair shops
7534	Tire retreading and repair shops
7536	Automotive glass replacement shops
7537	Automotive transmission repair shops
7538	General automotive repair shops
7539	Automotive repair shops, nec
754	Automotive Services, Except Repair

SIC	SIC Code Description
7542	Carwashes
7549	Automotive services, nec
76	MISCELLANEOUS REPAIR SERVICES
762	Electrical Repair Shops
7622	Radio and television repair
7623	Refrigeration service and repair
7629	Electrical repair shops, nec
763	Watch, Clock, and Jewelry Repair
7631	Watch, clock, and jewelry repair
764	Reupholstery and Furniture Repair
7641	Reupholstery and furniture repair
769	Miscellaneous Repair Shops
7692	Welding repair
7694	Armature rewinding shops
7699	Repair services, nec
78	MOTION PICTURES
781	Motion Picture Production & Services
7812	Motion picture & video production
7819	Services allied to motion pictures
782	Motion Picture Distribution & Services
7822	Motion picture and tape distribution
7829	Motion picture distribution services
783	Motion Picture Theaters
7832	Motion picture theaters, ex drive-in
7833	Drive-in motion picture theaters
784	Video Tape Rental
7841	Video tape rental
79	AMUSEMENT & RECREATION SERVICES
791	Dance Studios, Schools, and Halls
7911	Dance studios, schools, and halls
792	Producers, Orchestras, Entertainers
7922	Theatrical producers and services
7929	Entertainers & entertainment groups
793	Bowling Centers
7933	Bowling centers
794	Commercial Sports
7941	Sports clubs, managers, & promoters
7948	Racing, including track operation
799	Misc. Amusement, Recreation Services
7991	Physical fitness facilities
7992	Public golf courses
7993	Coin-operated amusement devices
7996	Amusement parks
7997	Membership sports & recreation clubs
7999	Amusement and recreation, nec
80	HEALTH SERVICES
801	Offices & Clinics of Medical Doctors
8011	Offices & clinics of medical doctors
802	Offices and Clinics of Dentists
8021	Offices and clinics of dentists

SIC	SIC Code Description
803	Offices of Osteopathic Physicians
8031	Offices of osteopathic physicians
804	Offices of Other Health Practitioners
8041	Offices and clinics of chiropractors
8042	Offices and clinics of optometrists
8043	Offices and clinics of podiatrists
8049	Offices of health practitioners, nec
805	Nursing and Personal Care Facilities
8051	Skilled nursing care facilities
8052	Intermediate care facilities
8059	Nursing and personal care, nec
806	Hospitals
8062	General medical & surgical hospitals
8063	Psychiatric hospitals
8069	Specialty hospitals exc. psychiatric
807	Medical and Dental Laboratories
8071	Medical laboratories
8072	Dental laboratories
808	Home Health Care Services
8082	Home health care services
809	Health and Allied Services, NEC
8092	Kidney dialysis centers
8093	Specialty outpatient clinics, nec
8099	Health and allied services, nec
81	LEGAL SERVICES
811	Legal Services
8111	Legal services
82	EDUCATIONAL SERVICES
821	Elementary and Secondary Schools
8211	Elementary and secondary schools
822	Colleges and Universities
8221	Colleges and universities
8222	Junior colleges
823	Libraries
8231	Libraries
824	Vocational Schools
8243	Data processing schools
8244	Business and secretarial schools
8249	Vocational schools, nec
829	Schools & Educational Services, NEC
8299	Schools & educational services, nec
83	SOCIAL SERVICES
832	Individual and Family Services
8322	Individual and family services
833	Job Training and Related Services
8331	Job training and related services
835	Child Day Care Services
8351	Child day care services
836	Residential Care
8361	Residential care

SIC	SIC Code Description
839	Social Services, NEC
8399	Social services, nec
84	MUSEUMS, BOTANICAL, ZOOLOGICAL GARDENS
841	Museums and Art Galleries
8412	Museums and art galleries
842	Botanical and Zoological Gardens
8422	Botanical and zoological gardens
86	MEMBERSHIP ORGANIZATIONS
861	Business Associations
8611	Business associations
862	Professional Organizations
8621	Professional organizations
863	Labor Organizations
8631	Labor organizations
864	Civic and Social Associations
8641	Civic and social associations
865	Political Organizations
8651	Political organizations
866	Religious Organizations
8661	Religious organizations
869	Membership Organizations, NEC
8699	Membership organizations, nec
87	ENGINEERING & MANAGEMENT SERVICES
871	Engineering & Architectural Services
8711	Engineering services
8712	Architectural services
8713	Surveying services
872	Accounting, Auditing, & Bookkeeping
8721	Accounting, auditing, & bookkeeping
873	Research and Testing Services
8731	Commercial physical research
8732	Commercial nonphysical research
8733	Noncommercial research organizations
8734	Testing laboratories
874	Management and Publi_ Relations
8741	Management services
8742	Management consulting services
8743	Public relations services
8744	Facilities support services
8748	Business consulting, nec
88	PRIVATE HOUSEHOLDS
881	Private Households
8811	Private households
89	SERVICES, NEC
899	Services, NEC
8999	Services, nec
91	EXECUTIVE, LEGISLATIVE, AND GENERAL
911	Executive Offices
9111	Executive offices
912	Legislative Bodies

SIC	SIC Code Description
9121	Legislative bodies
913	Executive and Legislative Combined
9131	Executive and legislative combined
919	General Government, NEC
9199	General government, nec
92	JUSTICE, PUBLIC ORDER, AND SAFETY
921	Courts
9211	Courts
922	Public Order and Safety
9221	Police protection
9222	Legal counsel and prosecution
9223	Correctional institutions
9224	Fire protection
9229	Public order and safety, nec
93	FINANCE, TAXATION, & MONETARY POLICY
931	Finance, Taxation, & Monetary Policy
9311	Finance, taxation, & monetary policy
94	ADMINISTRATION OF HUMAN RESOURCES
941	Admin. of Educational Programs
9411	Admin. of educational programs
943	Admin. of Public Health Programs
9431	Admin. of public health programs
944	Admin. of Social & Manpower Programs
9441	Admin. of social & manpower programs
945	Administration of Veterans' Affairs
9451	Administration of veterans' affairs
95	ENVIRONMENTAL QUALITY AND HOUSING
951	Environmental Quality
9511	Air, water, & solid waste management
9512	Land, mineral, wildlife conservation
953	Housing and Urban Development
9531	Housing programs
9532	Urban and community development
96	ADMINISTRATION OF ECONOMIC PROGRAMS
961	Admin. of General Economic Programs
9611	Admin. of general economic programs
962	Regulation, Admin. of Transportation
9621	Regulation, admin. of transportation
963	Regulation, Admin. of Utilities
9631	Regulation, admin. of utilities
964	Regulation of Agricultural Marketing
9641	Regulation of agricultural marketing
965	Regulation Misc. Commercial Sectors
9651	Regulation misc. commercial sectors
966	Space Research and Technology
9661	Space research and technology
97	NATIONAL SECURITY AND INTL. AFFAIRS
971	National Security
9711	National security
972	International Affairs

SIC	SIC Code Description
9721	International affairs
99	NONCLASSIFIABLE ESTABLISHMENTS
999	Nonclassifiable Establishments
9999	Nonclassifiable establishments
A	AGRICULTURE, FORESTRY, AND FISHING
B	MINING
C	CONSTRUCTION
D	MANUFACTURING
E	TRANSPORTATION AND PUBLIC UTILITIES
F	WHOLESALE TRADE
G	RETAIL TRADE
H	FINANCE, INSURANCE, AND REAL ESTATE
I	SERVICES
J	PUBLIC ADMINISTRATION
K	NONCLASSIFIABLE ESTABLISHMENTS

APPENDIX E

SCC DESCRIPTIONS

EXTERNAL COMBUSTION BOILERS

ELECTRIC GENERATION

Anthracite Coal

10100101	Pulverized Coal
10100102	Traveling Grate (Overfeed) Stoker

Bituminous Coal

10100201	Pulverized Coal: Wet Bottom
10100202	Pulverized Coal: Dry Bottom
10100203	Cyclone Furnace
10100204	Spreader Stoker
10100205	Traveling Grate (Overfeed) Stoker
10100212	Pulverized Coal: Dry Bottom (Tangential)
10100217	Atmospheric Fluidized Bed Combustion

Subbituminous Coal

10100221	Pulverized Coal: Wet Bottom
10100222	Pulverized Coal: Dry Bottom
10100223	Cyclone Furnace
10100224	Spreader Stoker
10100225	Traveling Grate (Overfeed) Stoker
10100226	Pulverized Coal: Dry Bottom (Tangential)

Lignite

10100301	Pulverized Coal
10100302	Pulverized Coal: Tangential Firing
10100303	Cyclone Furnace
10100304	Traveling Grate (Overfeed) Stoker
10100306	Spreader Stoker

Residual Oil

10100401	Grade 6 Oil: Normal Firing
10100404	Grade 6 Oil: Tangential Firing
10100405	Grade 5 Oil: Normal Firing
10100406	Grade 5 Oil: Tangential Firing

Distillate Oil

10100501	Grades 1 and 2 Oil
10100504	Grade 4 Oil: Normal Firing
10100505	Grade 4 Oil: Tangential Firing

Natural Gas

10100601	Boilers > 100 MBtu/Hr except Tangential
10100602	Boilers < 100 MBtu/Hr except Tangential
10100604	Tangentially Fired Units

Process Gas

10100701	Boilers > 100 MBTU/HR
10100702	Boilers < 100 MBTU/HR

Coke

10100801	All Boiler Sizes

Wood/Bark Waste

10100901	Bark-Fired Boiler
10100902	Wood/Bark Fired Boiler
10100903	Wood-Fired Boiler

Liquified Petroleum Gas (LPG)

10101001	Butane
10101002	Propane

Bagasse

10101101	All Boiler Sizes

Solid Waste

10101201	Specify Waste Material in Comments
10101202	Refuse Derived Fuel

Liquid Waste

10101301	Specify Waste Material in Comments
10101302	Waste Oil

INDUSTRIAL

Anthracite Coal

10200101	Pulverized Coal
10200104	Traveling Grate (Overfeed) Stoker
10200107	Hand-Fired

EXTERNAL COMBUSTION BOILERS

INDUSTRIAL

Bituminous Coal

10200201	Pulverized Coal: Wet Bottom
10200202	Pulverized Coal: Dry Bottom
10200203	Cyclone Furnace
10200204	Spreader Stoker
10200205	Overfeed Stoker
10200206	Underfeed Stoker
10200210	Overfeed Stoker**
10200212	Pulverized Coal: Dry Bottom (Tangential)
10200213	Wet Slurry
10200217	Atmospheric Fluidized Bed Combustion
10200219	Cogeneration

Subbituminous Coal

10200221	Pulverized Coal: Wet Bottom
10200222	Pulverized Coal: Dry Bottom
10200223	Cyclone Furnace
10200224	Spreader Stoker
10200225	Traveling Grate (Overfeed) Stoker
10200226	Pulverized Coal: Dry Bottom (Tangential)
10200229	Cogeneration

Lignite

10200301	Pulverized Coal
10200302	Pulverized Coal: Tangential Firing
10200303	Cyclone Furnace
10200304	Traveling Grate (Overfeed) Stoker
10200306	Spreader Stoker
10200307	Cogeneration

Residual Oil

10200401	Grade 6 Oil
10200402	10-100MMBTU/HR**
10200403	<10MMBTU/HR**
10200404	Grade 5 Oil
10200405	Cogeneration

Distillate Oil

10200501	Grades 1 and 2 Oil
10200502	10-100MMBTU/HR **
10200503	<10MMBTU/HR **
10200504	Grade 4 Oil
10200505	Cogeneration

Natural Gas

10200601	Over 100 MBtu/Hr
10200602	10-100 MMBtu/Hr
10200603	Less Than 10 MMBtu/Hr
10200604	Cogeneration

Process Gas

10200701	Petroleum Refinery Gas
10200704	Blast Furnace Gas
10200707	Coke Oven Gas
10200710	Cogeneration
10200799	Other: Specify in Comments

Coke

10200802	All Boiler Sizes
10200804	Cogeneration

Wood/Bark Waste

10200901	Bark-Fired Boiler (> 50,000 LB Steam)
10200902	Wood/Bark-Fired Boiler (> 50,000 LB STM)
10200903	Wood-Fired Boiler (> 50,000 LB STM)
10200904	Bark-Fired Boiler (< 50,000 LB Steam)
10200905	Wood/Bark-Fired Boiler (< 50,000 LB STM)
10200906	Wood-Fired Boiler (< 50,000 LB Steam)
10200907	Wood Cogeneration

Liquified Petroleum Gas (LPG)

10201001	Butane
10201002	Propane

Bagasse

10201101	All Boiler Sizes

Solid Waste

10201201	Specify Waste Material in Comments
10201202	Refuse Derived Fuel

EXTERNAL COMUBSTION BOILERS

INDUSTRIAL

Liquid Waste

10201301	Specify Waste Material in Comments
10201302	Waste Oil

CO Boiler

10201401	Natural Gas
10201402	Process Gas
10201403	Distillate Oil
10201404	Residual Oil

COMMERCIAL/INSTITUTIONAL

Anthracite Coal

10300101	Pulverized Coal
10300102	Traveling Grate (Overfeed) Stoker
10300103	Hand-Fired

Bituminous Coal

10300205	Pulverized Coal: Wet Bottom
10300206	Pulverized Coal: Dry Bottom
10300207	Overfeed Stoker
10300208	Underfeed Stoker
10300209	Spreader Stoker
10300211	Overfeed Stoker**
10300214	Hand-Fired
10300216	Pulverized Coal: Dry Bottom (Tangential)
10300217	Atmospheric Fluidized Bed Combustion

Subbituminous Coal

10300221	Pulverized Coal: Wet Bottom
10300222	Pulverized Coal: Dry Bottom
10300223	Cyclone Furnace
10300224	Spreader Stoker
10300225	Traveling Grate (Overfeed) Stoker
10300226	Pulverized Coal: Dry Bottom (Tangential)

Lignite

10300305	Pulverized Coal
10300306	Pulverized Coal: Tangential Firing
10300307	Traveling Grate (Overfeed) Stoker
10300309	Spreader Stoker

Residual Oil

10300401	Grade 6 Oil
10300402	10-100 MMBTU/HR **
10300403	<10MMBTU/HR **
10300404	Grade 5 Oil

Distillate Oil

10300501	Grades 1 and 2 Oil
10300502	10-100MMBTU/HR **
10300503	<10MMBTU/HR **
10300504	Grade 4 Oil

Natural Gas

10300601	Over 100 MMBtu/Hr
10300602	10-100 MMBtu/Hr
10300603	Less Than 10 MMBtu/Hr

Process Gas

10300701	Sewage Gas
10300799	Other Not Classified

Wood/Bark Waste

10300901	Bark-Fired Boiler
10300902	Wood/Bark Fired Boiler
10300903	Wood-Fired Boiler

Liquified Petroleum Gas (LPG)

10301001	Butane
10301002	Propane

Solid Waste

10301201	Specify Waste Material in Comments
10301202	Refuse Derived Fuel

Liquid Waste

10301301	Specify Waste Material in Comments
10301302	Waste Oil
10301303	Sewage Grease Skimmings

EXTERNAL COMBUSTION BOILERS

SPACE HEATERS

Industrial

10500102	Coal	**
10500105	Distillate Oil	
10500106	Natural Gas	
10500110	Liquified Petroleum Gas (LPG)	
10500113	Waste Oil: Air Atomized Burner	
10500114	Waste Oil: Vaporizing Burner	

Commercial-Institutional

10500202	Coal	**
10500205	Distillate Oil	
10500206	Natural Gas	
10500209	Wood	
10500210	Liquified Petroleum Gas (LPG)	
10500213	Waste Oil: Air Atomized Burner	
10500214	Waste Oil: Vaporizing Burner	

INTERNAL COMBUSTION ENGINES

ELECTRIC GENERATION

Distillate Oil (Diesel)

20100101	Turbine
20100102	Reciprocating

Natural Gas

20100201	Turbine
20100202	Reciprocating

Process Gas

20100702	Reciprocating

Landfill Gas

20100801	Turbine
20100802	Reciprocating

Kerosene/Naphtha (Jet Fuel)

20100901	Turbine
20100902	Reciprocating

Geysers/Geothermal

20101001	Steam Turbine

MISCELLANEOUS

Flares

20190099	Heavy Water

INDUSTRIAL

Distillate Oil (Diesel)

20200101	Turbine
20200102	Reciprocating
20200103	Turbine: Cogeneration
20200104	Reciprocating: Cogeneration

Natural Gas

20200201	Turbine
20200202	Reciprocating
20200203	Turbine: Cogeneration
20200204	Reciprocating: Cogeneration

Gasoline

20200301	Reciprocating

Large Bore Engine

20200401	Diesel
20200402	Dual Fuel (Oil/Gas)
20200403	Cogeneration: Dual Fuel

Residual/Crude Oil

20200501	Reciprocating

Kerosene/Naphtha (Jet Fuel)

20200901	Turbine
20200902	Reciprocating

Liquified Petroleum Gas (LPG)

20201001	Propane: Reciprocating
20201002	Butane: Reciprocating

INTERNAL COMBUSTION ENGINES

COMMERCIAL/INSTITUTIONAL

Distillate Oil (Diesel)

20300101	Reciprocating
20300102	Turbine

Natural Gas

20300201	Reciprocating
20300202	Turbine
20300203	Turbine: Cogeneration
20300204	Cogeneration

Gasoline

20300301	Reciprocating

Liquified Petroleum Gas (LPG)

20301001	Propane: Reciprocating
20301002	Butane: Reciprocating

ENGINE TESTING

Aircraft

20400101	Turbojet
20400102	Turboshaft
20400110	Jet A Fuel
20400111	JP-5 Fuel
20400112	JP-4 Fuel

Rocket Motor

20400201	SOLID PROPELLAN**
20400202	Liquid Propellant

Turbine

20400301	Natural Gas
20400302	Diesel/Kerosene

Reciprocating

20400401	Gasoline
20400402	Diesel/Kerosene

FUGITIVE EMISSIONS

Other Not Classified

28888801	Specify in Comments
28888802	Specify in Comments
28888803	Specify in Comments

CHEMICAL MANUFACTURING

CHEMICAL MANUFACTURING

Adipic Acid

30100101	General
30100102	Raw Material Storage
30100103	Cyclohexane Oxidation
30100104	Nitric Acid Reaction
30100105	Adipic Acid Refining
30100106	Drying, Loading, and Storage
30100107	Absorber
30100108	Dryer
30100109	Cooler
30100180	Fugitive Emissions: General
30100199	Other Not Classified

Ammonia Production

30100305	Feedstock Desulfurization
30100306	Primary Reformer: Natural Gas Fired
30100307	Primary Reformer: Oil Fired
30100308	Carbon Dioxide Regenerator
30100309	Condensate Stripper
30100399	Other Not Classified

Carbon Black Production

30100501	Channel Process
30100502	Thermal Process
30100503	Gas Furnace Process: Main Process Vent
30100504	Oil Furnace Process: Main Process Vent
30100506	Transport Air Vent
30100507	Pellet Dryer
30100508	Bagging/Loading
30100509	Furnace Process: Fugitive Emissions
30100599	Other Not Classified

CHEMICAL MANUFACTURING

CHEMICAL MANUFACTURING

Charcoal Manufacture

30100601	General
30100603	Batch Kiln
30100604	Continuous Furnace
30100605	Briquetting
30100699	Other Not Classified

Chlorine

30100799	OTHER NOT CLASSIFIED **

Chloro-Alkali Production

30100801	Liquefaction (Diaphragm Cell Process)
30100802	Liquefaction (Mercury Cell Process)
30100803	Chlorine Loading: Tank Car Vent
30100804	Chlorine Loading: Storage Car Vent
30100805	Air Blowing of Mercury Cell Brine
30100899	Other Not Classified

Cleaning Chemicals

30100901	Spray Drying: Soaps and Detergents
30100902	Speciality Cleaners
30100910	GENERAL **
30100999	Other Not Classified

EXPLOSIVES

Trinitrotoluene

30101011	Batch Process: Nitration Reactors Fume Recovery
30101012	Batch Process: Nitration Reactors Acid Recovery
30101013	Batch Process: Nitric Acid Concentrators
30101014	Batch Process: Sulfuric Acid Concentrators
30101015	Batch Process: Red Water Incinerator
30101021	Continuous Process: Nitration Reactor Fume Recover
30101022	Continuous Process: Nitration Reactor Acid Recover
30101023	Continuous Process: Red Water Incinerator
30101030	Open Burning: Waste
30101099	Other Not Classified
30101101	Rotary Kiln

CHEMICAL MANUFACTURING

Hydrochloric Acid

30101101	Rotary Kiln
30101198	Handling and Storage (99.9% Removal)
30101199	Other Not Classified

Hydrofluoric Acid

30101202	Rotary Kiln: Acid Reactor
30101203	Fluorspar Grinding/Drying
30101204	Fluorspar Handling Silos
30101205	Fluorspar Transfer
30101206	Tail Gas Vent
30101299	Other Not Classified

Nitric Acid

30101301	Absorber Tail Gas (Pre-1970 Facilities)
30101302	Absorber Tail Gas (Post-1970 Facilities)
30101303	Nitric Acid Concentrators (Pre-1970)
30101304	Nitric Acid Concentrators (Post-1970)
30101399	Other Not Classified
30101401	General Mixing and Handling

Paint Manufacture

30101401	General Mixing and Handling
30101402	Pigment Handling
30101403	Solvent Loss: General
30101404	Raw Material Storage
30101499	Other Not Classified

Varnish Manufacturing

30101501	Bodying Oil
30101502	Oleoresinous
30101503	Alkyd
30101505	Acrylic
30101599	Other Not Classified

CHEMICAL MANUFACTURING

CHEMICAL MANUFACTURING

Phosphoric Acid: Wet Process

30101601	Reactor
30101602	Gypsum Pond
30101603	Condensor
30101699	Other Not Classified

Phosphoric Acid: Thermal Process

30101702	Absorber: General
30101703	Absorber w/ Packed Tower
30101704	Absorber w/ Venturi Scrubber
30101705	Absorber w/ Glass Mist Eliminator
30101706	Absorber w/ Wire Mist Eliminator
30101707	Absorber w/ High-pressure Mist Eliminator
30101708	Absorber w/ ESP
30101799	Other Not Classified

Plastics Production

Specific Products

30101801	Polyvinyl Chlorides and Copolymers: General
30101802	Polypropylene and Copolymers: General
30101803	Ethylene-Propylene Copolymers: General
30101805	Phenolic Resins: General
30101807	Polyethylene (High density):General
30101808	Monomer and Solvent Storage
30101809	Extruder
30101810	Conveying
30101811	Storage
30101812	Polyethylene (Low Density):General
30101813	Recovery and Purification System
30101814	Extruder
30101815	Pellet Silo
30101816	Transfering/Handling /Loading/Packing
30101817	Polystyrene: General
30101818	Reactor
30101819	Solvent Recovery
30101820	Polymer Drying
30101821	Extruding/ Pelletizing/ Conveying/Storage
30101822	Acrylic Resins: General
30101827	Polyamide Resins: General
30101832	Urea-Formaldehyde Resins: General
30101837	Polyester Resins: General
30101838	Polyester/Alkyd Resins: Reactor Kettle
30101839	Polyester/Alkyd Resins: Resin Thinning Tank
30101840	Polyester/Alkyd Resins: Resin Storage Tank
30101842	Melamine Resins: General
30101847	Epoxy Resins: General
30101849	Acrylonitrile- Butadiene-Styrene (ABS) Resin
30101852	Polyfluorocarbons: General

CHEMICAL MANUFACTURING

Polyethylene

30101860	Recovery System
30101861	Purification System
30101863	Extruder
30101864	Pellet Silo/Storage
30101865	Transfering / Conveying
30101866	Packing/Shipping

Polyether Resins

30101870	Reactor
30101871	Blowing Agent: Freon
30101872	Miscellaneous

Polyurethane

30101880	Reactor
30101881	Blowing Agent: Freon
30101882	Blowing Agent: Methylene Chloride
30101883	Transfering/ Conveying/ Storage
30101884	Packing/Shipping
30101885	Other Not Classified

PLASTICS PRODUCTION

General Processes

30101890	Catalyst Preparation
30101891	Reactor Vents
30101892	Separation Processes
30101893	Raw Material Storage

CHEMICAL MANUFACTURING

PLASTICS PRODUCTION

General Processes

30101894	Solvent Storage
30101899	Other Not Classified

CHEMICAL MANUFACTURING

Phthalic Anhydride

30101901	o-Xylene Oxidation: Main Process Stream
30101902	o-Xylene Oxidation: Pre-Treatment
30101904	o-Xylene Oxidation: Distillation
30101905	Naphthalene Oxidation: Main Process Stream
30101906	Naphthalene Oxidation: Pre-Treatment
30101907	Naphthalene Oxidation: Distillation

Printing Ink Manufacture

30102001	Vehicle Cooking: General
30102002	Vehicle Cooking: Oils
30102003	Vehicle Cooking: Oleoresin
30102004	Vehicle Cooking: Alkyds
30102005	Pigment Mixing
30102099	Other Not Classified

Sodium Carbonate

30102101	Solvay Process: NH3 Recovery
30102102	Solvay Process: Handling
30102103	Trona Crushing/ Screening
30102104	Calciner: Gas-Fired
30102105	Calciner: Coal-Fired
30102106	Rotary Dryer: Gas Fired
30102107	Fluid Bed Dryer: Indirect Fired
30102108	Dissolver
30102110	TRONA-CALCINING**
30102111	TRONA-DRYER **
30102112	Rotary Pre-dryer
30102113	Bleacher: Gas Fired
30102114	Rotary Dryer, Steam Tube
30102120	BRINE EVAPORATI**
30102199	Other Not Classified

SULFURIC ACID

Chamber Process

30102201	General

Contact Process

30102301	Absorber @ 99.9% Conversion
30102304	Absorber @ 99.5% Conversion
30102306	Absorber @ 99.0% Conversion
30102308	Absorber @ 98.0% Conversion
30102310	Absorber @ 97.0% Conversion
30102312	Absorber @ 96.0% Conversion
30102314	Absorber @ 95.0% Conversion
30102316	Absorber @ 94.0% Conversion
30102318	Absorber @ 93.0% Conversion
30102319	Concentrator
30102320	Tank Car and Truck Unloading
30102321	Storage Tank Vent
30102322	Process Equipment Leaks
30102399	Other Not Classified

SYNTHETIC ORGANIC FIBER MANUFACTURING

Specific Products

30102401	Polyamide (e.g., Nylon)
30102402	Polyesters (e.g., Dacron)
30102405	Polyfluorocarbons (e.g., Teflon)
30102410	Acrylics (e.g., Orlon)
30102414	Polyolefins (e.g., Polypropylene)
30102415	Vinyls (e.g., Saran)
30102416	Aramid

General Processes

30102421	Dope Preparation
30102422	Filtration
30102423	Fiber Extrusion
30102424	Washing/ Drying/ Finishing
30102425	Fiber Storage
30102426	Equipment Cleanup
30102427	Solvent Storage
30102499	Other Not Classified

CHEMICAL MANUFACTURING

Cellulosic Fiber Production

30102501	Viscose (e.g., Rayon)
30102505	Acetate
30102599	Other Not Calssified

Synthetic Rubber (Manufacturing Only)

30102601	General
30102602	Butyl (Isobutylene)
30102608	Acrylonitrile
30102609	Dryers
30102610	Blowdown Tank
30102611	Steam Stripper
30102612	Pre-storage Tank
30102613	Monomer Recovery: Absorber Vent
30102614	Blending Tanks
30102615	Isoprene
30102616	Latex: Monomer Removal
30102617	Latex: Blending Tank
30102625	Chloroprene
30102630	Silicone Rubber
30102699	Other Not Classified

Ammonium Nitrate Production

30102701	PRILTWR-NEUTRL2**
30102704	Neutralizer
30102705	GRANULATOR **
30102706	DRYERS COOLERS **
30102707	Rotary Drum Granulator
30102708	Pan Granulator
30102709	Bulk Loading (General)
30102710	Bagging of Product
30102711	Neutralizer: High Density
30102712	Prilling Tower: High Density
30102713	HD DRY&COOL(SCB**
30102714	Prilling Cooler: High Density
30102717	Evaporator/ Concentrator: High Density
30102718	Coating: High Density
30102720	Solids Screening
30102721	Neutralizer: Low Density
30102722	Prilling Tower: Low Density
30102723	LD DRY&COOL(SCB**
30102724	Prilling Cooler: Low Density
30102725	Prilling Dryer: Low Density
30102727	Evaporator/ Concentrator: Low Density
30102728	Coating: Low Density
30102729	Rotary Drum Granulator Coolers
30102730	Pan Granulator Coolers

Normal Superphosphate

30102801	Grinding/Drying
30102803	Rock Unloading
30102804	Rock Feeder System
30102805	Mixer/Den
30102806	Curing Building
30102807	Bagging/Handling
30102820	Mixing
30102821	Den
30102822	Curing
30102823	Ammoniator/ Granulator
30102824	Dryer
30102825	Cooler

Triple Superphosphate

30102903	Rock Unloading
30102904	Rock Feeder System
30102905	Run of Pile: Mixer/Den/Curing
30102906	Granulator: Reactor/Dryer
30102907	Granulator: Curing
30102908	Bagging/Handling
30102920	Mixing
30102921	Den
30102922	Curing
30102923	Ammoniator/ Granulator
30102924	Dryer
30102925	Cooler

Ammonium Phosphates

30103001	Dryers and Coolers
30103002	Ammoniator/ Granulator
30103003	Screening/Transfer
30103004	Bagging/Handling
30103020	Mixing
30103021	Den
30103022	Curing
30103023	Ammoniator/ Granulator
30103024	Dryer
30103025	Cooler
30103099	Other Not Classified

CHEMICAL MANUFACTURING

Terephthalic Acid/Dimethyl Terephthalate

30103101	HNO3 - Paraxylene - General
30103102	Reactor Vent
30103103	Crystallization, Separation, and Drying Vent
30103104	Distillation and Recovery Vent
30103105	Product Transfer Vent
30103180	Fugitive Emissions
30103199	Other Not Classified

Elemental Sulfur Production

30103201	Mod. Claus: 2 Stage w/o Control (92-95% Removal)
30103202	Mod. Claus: 3 Stage w/o Control (95-96% Removal)
30103203	Mod. Claus: 4 Stage w/o Control (96-97% Removal)
30103204	Sulfur Removal Process (99.9% Removal)
30103299	Other Not Classified

Pesticides

30103301	Malathion
30103311	Agricultural Pesticides: General
30103312	Agricultural Pesticides: General
30103399	Other Not Classified

Aniline

30103402	General
30103403	Reactor Cycle Purge Vent
30103404	Dehydration Column Vent
30103405	Purification Column Vent
30103406	Fugitive Emissions

Ethanolamines

30103410	General
30103411	Ammonia Scrubber Vent
30103412	Vacuum Distillation: Jet Vent
30103414	Fugitive Emissions
30103415	Ethylenediamine
30103420	Hexamethylenediamine
30103425	Hexamethylene- tetramine
30103430	Melamine
30103435	Methylamines
30103499	Other Not Classified

Inorganic Pigments

30103501	TiO2 Sulfate Process: Calciner
30103502	TiO2 Sulfate Process: Digestor
30103503	TiO2 Chloride Process: Reactor
30103506	Lead Oxide: Barton Pot
30103507	Lead Oxide: Calciner
30103510	Red Lead
30103515	White Lead
30103520	Lead Chromate
30103550	Ore Grinding
30103551	Ore Dryer
30103552	Pigment Milling
30103553	Pigment Dryer
30103554	Conveying/Storage/ Packing
30103599	Other Not Classified

Sodium Bicarbonate

30103801	General

Hydrogen Cyanide

30103901	Air Heater
30103902	Ammonia Absorber
30103903	HCN Absorber

Urea Production

30104001	General: Specify in Comments
30104002	Solution Concentration (controlled)
30104003	Prilling
30104004	Drum Granulation
30104005	Coating
30104006	Bagging
30104007	Bulk Loading
30104008	Non-Fluidized Bed Prilling (Agricultural Grade)
30104009	Non-Fluidized Bed Prilling (Feed Grade)
30104010	Fluidized Bed Prilling (Agricultural Grade)
30104011	Fluidized Bed Prilling (Feed Grade)
30104012	Rotary Drum Cooler
30104013	Solids Screening

CHEMICAL MANUFACTURING

CHEMICAL MANUFACTURING

Nitrocellulose

30104101	Nitration Reactor
30104102	Sulfuric Acid Concentrators
30104103	Boiling Tubs
30104104	Nitric Acid Concentrators
30104199	Other Not Classified

LEAD ALKYL MANUFACTURING

Na/Pb Alloy Process

30104201	Recovery Furnace
30104202	Process Vents: Tetraethyl Lead
30104203	Process Vents: Tetramethyl Lead
30104204	Sludge Pits

Electolytic Process

30104301	General: Electrolytic Proc

CHEMICAL MANUFACTURING

Organic Fertilizer

30104501	General: Mixing/Handling

Adhesives

30105001	GENL/COMPND UNK**

Pharmaceutical Preparations

30106001	Vacuum Dryers
30106002	Reactors
30106003	Distillation Units
30106004	Filters
30106005	Extractors
30106006	Centrifuges
30106007	Crystallizers
30106008	Exhaust Systems
30106009	Air Dryers
30106010	Storage/Transfer
30106011	Coating Process
30106012	Granulation Process
30106099	Other Not Classified

INORGANIC CHEMICAL MANUFACTURING

General Processes

30107001	Fugitive Leaks
30107002	Storage/Transfer

CHEMICAL MANUFACTURING

Acetone Production

30109101	Acetone: General

Ketone Production

30109105	Methyl Ethyl Ketone
30109110	Methyl Isobutyl Ketone

Acetone Production

30109151	Cumene Oxidation
30109152	CHP Concentrator
30109153	Light-ends Distillation Vent
30109154	Acetone Finishing Column
30109180	Fugitive Emissions

Ketone Production

30109199	Other Not Classified

Maleic Anhydride

30110002	Product Recovery Absorber
30110003	Vacuum System Vent
30110004	Briquetting
30110005	Secondary Sources: Dehydration Column, Vacuum System
30110080	Fugitive Emissions
30110099	Other Not Classified

Asbestos Chemical

30111103	BRAKE LINE/GRIN**
30111199	NOT CLASSIFIED **

Elemental Phosphorous

30111201	Calciner
30111202	Furnace
30111299	Other Not Classified

CHEMICAL MANUFACTURING

Boric Acid

30111301	Dryer

Potassium Chloride

30111401	Dryer

Formaldehyde

30112001	Formaldehyde: Silver Catalyst
30112002	Formaldehyde: Mixed Oxide Catalyst
30112005	Absorber Vent
30112006	Fractionator Vent
30112007	Fugitive Emissions

Acetaldehyde

30112011	Acetaldehyde from Ethylene
30112012	Acetaldehyde from Ethanol
30112013	Off-Air Absorber Vent
30112014	Off-Gas Absorber Vent
30112017	Fugitive Emissions

Butyraldehyde

30112021	General

Acrolein

30112031	CO2 Stripping Tower
30112032	Aqueous Acrolein Receiver
30112033	Distillation System
30112034	Refrigeration Unit
30112037	Fugitive Emissions
30112099	Other Not Classified

Organic Dyes/Pigments

30112199	Other Not Classified

Chloroprene

30112401	General
30112402	Butadiene Dryer
30112403	Chlorination Reactor
30112404	Dichlorobutene Still
30112405	Isomerization and 3,4-DCB Recovery Vent
30112406	Chloroprene Stripper
30112407	Brine Stripper
30112480	Fugitive Emissions

Ethylene Dichloride

30112501	Ethylene Dichloride via Oxychlorination
30112502	Ethylene Dichloride via Direct Chlorination
30112504	Caustic Scrubber
30112505	Reactor Vessel
30112506	Distillation Unit
30112509	Fugitive Emissions

Chloromethanes

30112510	General
30112511	Recycled Methane Inert-Purge
30112512	Drying Bed Regeneration Vent
30112514	Fugitive Emissions

Ethyl Chloride

30112515	Ethyl Chloride: General

Perchloroethylene

30112520	General
30112521	Distillation Vent
30112522	Caustic Scrubber
30112524	Fugitive Emissions

1,1,1-Trichloroethane

30112525	General
30112526	HCl Absorber Vent
30112527	Drying Column Vent
30112528	Distillation Column Vent
30112529	Fugitive Emissions

Trichloroethylene

30112530	General
30112531	Distillation Unit
30112532	Neutralizer
30112533	Product Drying Column
30112534	Fugitive Emissions

CHEMICAL MANUFACTURING

CHEMICAL MANUFACTURING

Chlorobenzene

30112535	Chlorobenzenes: General

Vinyl Chloride

30112540	General
30112541	Cracking Furnace
30112542	HCl Recovery
30112543	Light-ends Recovery
30112544	Drying Column: Dichloroethane
30112545	Drying Column: Vinyl Chloride Monomer
30112546	Product Recovery Still
30112547	Cracking Furnace Decoking
30112550	Fugitive Emissions

Vinylidene Chloride

30112551	General
30112552	Dehydrochlorination Reactor
30112553	Distillation Column Vent
30112555	Fugitive Emissions

Chlorinated Organics

30112599	Other Not Classified

Brominated Organics

30112699	Bromine Organics

Fluorocarbons/Chlorofluorocarbons

30112701	General
30112702	Distillation Column
30112703	HCl Recovery Column
30112720	Chlorofluorocarbon 12/11
30112730	Chlorofluorocarbon 23/22
30112740	Chlorofluorocarbon 113/114
30112780	Fugitive Emissions

Ammonium Sulfate

30113004	Rotary Dryer
30113005	Fluid Bed Dryer

Acetic Acid

30113201	Acetic Acid via Methanol
30113205	Acetic Acid via Butane
30113210	Acetic Acid via Acetaldehyde

Acrylic Acid

30113221	General
30113222	Quench-Absorber
30113223	Extraction Column
30113224	Vacuum System
30113227	Fugitive Emissions

ORGANIC ACIDS MANUFACTURING

Other Not Classified

30113299	Other Not Classified

CHEMICAL MANUFACTURING

Acetic Anhydride

30113301	General
30113302	Reactor By-Product Gas Vent
30113303	Distillation Column Vent
30113380	Fugitive Emissions

Esters Production

30113701	Ethyl Acrylate
30113710	Butyl Acrylate
30113799	Acrylates: Specify in Comments

Acetylene Production

30114001	Raw Material Handling
30114002	Grinding/Milling
30114003	Mixing
30114004	Waste Handling
30114005	General

Bisphenol A

30115201	General

CHEMICAL MANUFACTURING

Butadiene

30115301	General
30115310	Houdry Process: General
30115311	Flue Gas Vent
30115312	Dehydrogenation Reactor
30115320	N-Butene Process: General
30115321	Flue Gas Vent
30115322	Hydrocarbon Absorber Column
30115380	Fugitive Emissions

Cumene

30115601	General
30115602	Benzene Drying Column
30115603	Catalyst Mix Tank Scrubber Vent
30115604	Wash-Decant System Vent
30115605	Benzene Recovery
30115606	Cumene Distillation Vent
30115607	DIPB Stripping Vent
30115680	Fugitive Emissions

Cyclohexane

30115701	General
30115702	Blowndown Tank Discharge
30115703	Pumps/Valves/ Compressors
30115704	Catalyst Replacement
30115780	Fugitive Emissions

Cyclohexanone/ol

30115801	General
30115802	High Pressure Scrubber Vent
30115803	Low Pressure Scrubber Vent
30115821	Hydrogenation Reactor Vent
30115822	Distillation Vent
30115880	Fugitive Emissions

Vinyl Acetate

30116701	General
30116702	Inert-Gas Purge Vent
30116703	CO2 Purge Vent
30116704	Inhibitor Mix Tank Discharge
30116780	Fugitive Emissions
30116799	Other Not Classified

Ethyl Benzene

30116901	General
30116902	Alkylation Reactor Vent
30116903	Benzene Drying
30116904	Benzene Recovery/ Recycle
30116905	Ethylbenzene Recovery
30116906	Polyethylbenzene Recovery
30116980	Fugitive Emissions

Ethylene Oxide

30117401	General
30117402	Air Oxidation Process Reactor: Main Vent
30117410	Oxygen Oxidation Process Reactor: CO2 Purge Vent
30117411	Oxygen Oxidation Process Reactor: Argon Purge Vent
30117421	Stripper Purge Vent
30117480	Fugitive Emissions

Glycerin (Glycerol)

30117601	General
30117610	Chlorination Process: General
30117611	CO2 Absorber
30117612	Evaporator
30117613	Concentrator
30117614	Stripping Column
30117615	Light-ends Stripping Column
30117616	Solvent Stripping Column
30117617	Product Distillation Column
30117618	Cooling Tower
30117630	Oxidation Process: General
30117631	Light-ends Stripper
30117632	Concentrator
30117633	Glycerin Flasher Column
30117634	Product Distillation Column
30117680	Fugitive Emissions

Toluene Diisocyanate

30118101	General
30118102	Sulfuric Acid Concentrator
30118103	Nitration Reactor
30118104	Catalyst Filtration
30118105	TDA Vacuum Distillation Vent
30118106	Dichlorobenzene Solvent Recovery
30118107	TDI Flash Distillation
30118108	TDI Purification
30118109	Residue Vacuum Distillation Unit

CHEMICAL MANUFACTURING

CHEMICAL MANUFACTURING

Toluene Diisocyanate

30118110	HCl Absorber
30118180	Fugitive Emissions

Methyl Methacrylate

30119001	General
30119002	Acetone Cyanohydrin Reactor Off-Gas
30119003	Recovery Columns
30119004	Acetone Evaporation Vacuum Vent
30119010	Hydrolysis Reactor
30119011	Distillation Unit
30119012	MMA and Light-ends Distillation Unit
30119013	Acid Distillation
30119014	MMA Purification
30119080	Fugitive Emissions

Nitrobenzene

30119501	General
30119502	Reactor and Separator Vent
30119503	Acid Stripper Vent
30119504	Washer and Neutralizer Vent
30119505	Nitrobenzene Stripper Vent
30119506	Waste Acid Storage
30119580	Fugitive Emissions

Propylene Production

30119705	General
30119706	Reactor
30119707	Drying Tower
30119708	Light-ends Stripper
30119709	Fugitive Emissions

Butylene

30119710	General

Ethylene Production

30119701	General
30119741	Flue Gas Vent
30119742	Pyrolysis Furnace Decoking
30119743	Acid Gas Removal
30119744	Catalyst Regeneration
30119745	Compressor Lube Oil Vent
30119749	Fugitive Emissions

Olefin Production

30119799	Other Not Classified

Phenol

30120201	General
30120202	Cumene Oxidation
30120203	CHP Concentrator
30120204	Light-ends Distillation Vent
30120205	Acetone Finishing
30120206	Phenol Distillation Column
30120210	Oxidate Wash/ Separation
30120211	CHP Cleavage Vent
30120280	Fugitive Emissions

Propylene Oxide

30120501	General
30120502	Chlorohydronation Process: General
30120503	Vent Gas Scrubber Vent
30120504	Saponification Column Vent
30120505	PO Stripping Column Vent
30120506	Light-ends Stripping Column Vent
30120507	PO Final Distillation Column Vent
30120508	DCP Distillation Column Vent
30120509	DCIPE Distillation Column Vent
30120520	Isobutane Hydroperoxide Process: General
30120521	Oxidation Reactor Scrubber Vent
30120522	TBA Stripping Column Vent
30120523	Catalyst Mix Tank Vent
30120524	PO Stripping Column Vent
30120525	Crude TBA Recovery Column Vent
30120526	TBA Wash-Decant System Vent
30120527	Wastewater Stripping Column Vent
30120528	Solvent Scrubber Vent
30120529	Solvent Recovery Column Vent
30120530	Water Stripping Column Vent
30120531	Propylene Glycol & Dipropylene Glycol Comb'd Vent
30120532	Flue Gas Vent
30120540	Ethylbenzene Hydroperoxide Process: General
30120541	Oxidation Reactor Scrubber Vent
30120542	Falling Film Evaporator Vent
30120543	Catalyst Mix Tank Vent
30120544	Separation Column Vent
30120545	Light-ends Stripping Column Vent

CHEMICAL MANUFACTURING

CHEMICAL MANUFACTURING

Propylene Oxide

30120546	Propylene Recovery Column Vent
30120547	Product Wash-Decant System Vent
30120548	Mixed Hydrocarbon Wash-Decant System Vent
30120549	Ethyl Benzene Wash-Decant System Vent
30120550	Ethyl Benzene Stripping Column Vent
30120551	Light-hydrocarbon Stripping Column Vent
30120552	MBA-AP Stripping Column Vent
30120553	Dehydration Reactor System Vent
30120554	Light-impurities Stripping Column Vent
30120555	Styrene Finishing Column Vent
30120580	Fugitive Emissions

Styrene

30120601	General
30120602	Benzene Recycle
30120603	Styrene Purification
30120680	Fugitive Emissions

Caprolactum

30121001	General
30121002	Cyclohexanone Purification Vent
30121003	Dehydrogenation Reactor Vent
30121004	Oleum Reactor
30121005	Neutralization Reactor Vent
30121006	Solvent Separation/ Recovery
30121007	Oximation Reactor/ Separator
30121008	Caprolactum Purification
30121009	Ammonium Sulfate Drying
30121010	Ammonium Sulfate: Cooling/Screening/ Storage
30121080	Fugitive Emissions

Linear Alkylbenzene

30121101	Olefin Process: General
30121102	Benzene Drying
30121103	Hydrogen Fluoride Scrubber Vent
30121104	Vacuum Refining
30121121	Chlorination Process: General
30121122	Parafin Drying Column Vent
30121123	HCl Absorber Vent
30121124	Atmospheric Wash-Decant Vent
30121125	Benzene Stripping Column
30121180	Fugitive Emissions

Methanol

30125001	General
30125002	Purge Gas Vent
30125003	Distillation Vent
30125004	Fugitive Emissions

Alcohols Production

30125005	Ethanol via Ethylene
30125010	Ethanol by Fermentation
30125015	Isopropanol
30125020	Alcohols by Oxo Process
30125025	Fatty Alcohols by Hydrogenation
30125099	Other Not Classified

Ethylene Glycol

30125101	General
30125102	Evaporator Purge Vent
30125103	Water Removal Steam - Jet Ejector
30125104	Distillation Column Vent
30125180	Fugitive Emissions

Ether Production

30125201	General

Glycol Ethers

30125301	General
30125302	Vacuum System Vent
30125305	Catalyst-Methanol Mix Tank
30125306	Methanol Recovery Column Vent
30125315	Catalyst-Ethanol Mix Tank
30125316	Ethanol Recovery Column
30125325	Catalyst-Butanol Mix Tank
30125326	Butanol Recovery Column
30125380	Fugitive Emissions

Nitriles Production

30125401	Acetonitrile

CHEMICAL MANUFACTURING

CHEMICAL MANUFACTURING

Acrylonitrile

30125405	General
30125406	Absorber Vent: Normal
30125407	Absorber Vent: Startup
30125408	Recovery/ Purification Column Vent
30125409	Fugitive Emissions

Adiponitrile

30125410	via Adipic Acid: General
30125411	Ammonia Recovery Still
30125412	Product Fractionator Vent
30125413	Product Recovery Vent
30125415	via Butadiene: General
30125416	Chlorination Reactor
30125417	Cyanide Synthesis
30125418	Cyanation/ Isomerization
30125420	Fugitive Emissions

Nitriles Production

30125499	Other Not Classified

Benzene Production

30125801	General
30125802	Reactor
30125803	Distillation Unit

Toluene Production

30125805	General
30125806	Reactor
30125807	Distillation Unit

Aromatics Production

30125810	p-Xylene: General

Mixed Xylenes

30125815	General
30125816	Reactor
30125817	Distillation Unit

Aromatics Production

30125880	Fugitive Emissions
30125899	Other Not Classified

Chlorobenzene

30130101	Tail Gas Scrubber
30130102	Benzene Drying: Distillation
30130103	Benzene Recovery
30130104	Heavy-ends Processing
30130105	MCB Distillation
30130106	Vacuum System Vent
30130107	DCB Crystallization
30130108	DCB Crystal Handling/ Loading
30130110	Catalyst Incineration
30130180	Fugitive Emissions

Carbon Tetrachloride

30130201	General
30130202	Distillation Vent
30130203	Caustic Scrubber
30130280	Fugitive Emissions

Allyl Chloride

30130301	Chlorination Process: General
30130302	HCl Absorber
30130303	Light-ends Distillation
30130304	Allyl Chloride Distillation Column
30130305	DCP Distillation Column
30130380	Fugitive Emissions

Allyl Alcohol

30130401	General
30130402	Catalyst Preparation
30130403	Filtration System
30130404	Light-ends Stripper
30130405	Distillation System Condenser
30130480	Fugitive Emissions

Epichlorohydrin

30130501	General
30130502	Epoxidation Reactor
30130503	Azetrope Column
30130504	Light-ends Stripper
30130505	Finishing Column
30130580	Fugitive Emissions

CHEMICAL MANUFACTURING

CHEMICAL MANUFACTURING

Nitroglycerin

30140101	Continuous Nitrator
30140102	Product Purification /Neutralization
30140103	Nitric Acid Recovery

General Processes

30180001	Fugitive Leaks
30181001	Air Oxidation Units
30182001	Wastewater Stripper
30182002	Wastewater Treatment
30182003	Wastewater Treatment
30183001	Storage/Transfer
30184001	Distillation Units

Fugitive Emissions

30188801	Specify in Comments Field
30188802	Specify in Comments Field
30188803	Specify in Comments Field
30188804	Specify in Comments Field
30188805	Specify in Comments Field

Other Not Classified

30199998	Specify in Comments Field
30199999	Specify in Comments Field

INORGANIC CHEMICAL STORAGE

Fixed Roof Tanks

30187001	Hydrochloric Acid: Breathing Loss
30187002	Hydrochloric Acid: Working Loss
30187003	Hydrofluoric Acid: Breathing Loss
30187004	Hydrofluoric Acid: Working Loss
30187005	Nitric Acid: Breathing Loss
30187006	Nitric Acid: Working Loss
30187007	Phosphoric Acid: Breathing Loss
30187008	Phosphoric Acid: Working Loss
30187009	Sulfuric Acid: Breathing Loss
30187010	Sulfuric Acid: Working Loss
30187097	Specify Liquid: Breathing Loss
30187098	Specify Liquid: Working Loss

Floating Roof Tanks

30187501	Carbon Disulfide: Breathing Loss
30187502	Carbon Disulfide: Withdrawal Loss
30187597	Specify Liquid: Breathing Loss
30187598	Specify Liquid: Withdrawal Loss

Pressure Tanks

30188501	Ammonia: Withdrawal Loss
30188502	Carbon Monoxide: Withdrawal Loss
30188503	Chlorine: Withdrawal Loss
30188504	Hydrogen Cyanide: Withdrawal Loss
30188505	Sulfur Dioxide: Withdrawal Loss
30188599	Specify Gas: Withdrawal Loss

FUEL FIRED EQUIPMENT

Process Heaters

30190001	Distillate Oil (No. 2)
30190002	Residual Oil
30190003	Natural Gas
30190004	Process Gas

Incinerators

30190011	Distillate Oil (No. 2)
30190012	Residual Oil
30190013	Natural Gas
30190014	Process Gas

Waste Gas Flares

30190099	Specify in Comments Field

FOOD AND AGRICULTURE

FOOD AND AGRICULTURE

Alfalfa Dehydration

30200101	General **
30200102	Primary Cyclone and Dryer
30200103	Meal Collector Cyclone
30200104	Pellet Cooler Cyclone
30200199	Other Not Classified

FOOD AND AGRICULTURE

Coffee Roasting

30200201	Direct Fired Roaster
30200202	Indirect Fired Roaster
30200203	Stoner/Cooler
30200299	Other Not Classified

Instant Coffee Products

30200301	Spray Dryer

Cotton Ginning

30200401	Unloading Fan
30200402	Seed Cotton Cleaning System
30200403	Stick/Burr Machine
30200404	Miscellaneous
30200410	General
30200499	NOT CLASSIFIED **

Feed and Grain Terminal Elevators

30200501	SHIPING/RECEIVI**
30200502	TRANSFER/CONVEY**
30200503	Cleaning
30200504	Drying
30200505	Unloading (Receiving)
30200506	Loading (Shipping)
30200507	Removal from Bins (Tunnel Belt)
30200508	Elevator Legs (Headhouse)
30200509	Tripper (Gallery Belt)
30200510	Removal from Bins (Tunnel Belt)
30200511	Elevator Legs (Headhouse)
30200512	Terminal Elevators: General

Feed and Grain Country Elevators

30200601	SHIPNG/RECEIVIN**
30200602	TRANSFER/CONVEY**
30200603	Cleaning
30200604	Drying
30200605	Unloading (Receiving)
30200606	Loading (Shipping)
30200607	Removal from Bins (Tunnel Belt)
30200608	Elevator Legs (Headhouse)
30200609	Removal from Bins (Tunnel Belt)
30200610	Elevator Legs (Headhouse)
30200611	Country Elevators: General

Corn Meal

30200701	General	**

Soybean

30200702	General	**

Barley Milling

30200703	Barley Cleaning

Milo Milling

30200704	Milo Cleaning

Barley Milling

30200705	Barley Flour Mill

Durum Milling

30200711	Grain Receiving
30200712	Precleaning/Handling
30200713	Cleaning House
30200714	Millhouse

Rye Milling

30200721	Grain Receiving
30200722	Precleaning/Handling
30200723	Cleaning House
30200724	Millhouse

Wheat Flour Mill

30200730	General	**

Wheat Milling

30200731	Grain Receiving
30200732	Precleaning/Handling
30200733	Cleaning House
30200734	Millhouse

Corn: Dry Milling

30200741	Grain Receiving
30200742	Grain Drying
30200743	Precleaning/Handling
30200744	Cleaning House
30200745	Degerming and Milling

FOOD AND AGRICULTURE

FOOD AND AGRICULTURE

Corn: Wet Milling

30200751	Grain Receiving
30200752	Grain Handling
30200753	Grain Cleaning
30200754	Dryers
30200755	Bulk Loading
30200756	Milling

Oat Milling

30200760	General

Rice Milling

30200771	Grain Receiving
30200772	Precleaning/Handling
30200773	Drying
30200774	Cleaning/Milhouse

Soybean Mills

30200781	Grain Receiving
30200782	Grain Handling
30200783	Grain Cleaning
30200784	Drying
30200785	Cracking and Dehulling
30200786	Hull Grinding
30200787	Bean Conditioning
30200788	Flaking
30200789	Meal Dryer
30200790	Meal Cooler
30200791	Bulk Loading

NOT CLASSIFIED

30200799	SEE COMMENTS **

Barley Feed

30200801	General **

Feed Manufacture

30200802	Grain Receiving
30200803	Shipping
30200804	Handling
30200805	Grinding
30200806	Pellet Coolers
30200815	Grinding
30200816	Pellet Cooler
30200899	NOT CLASSIFIED **

Beer Production

30200901	Grain Handling
30200902	Drying Spent Grains
30200903	Brewing
30200904	Aging
30200905	Malt Dryer
30200998	OTHER/NOT CLASI**
30200999	OTHER/NOT CLASI**

Whiskey Fermentation

30201001	Grain Handling
30201002	Drying Spent Grains
30201003	Aging
30201004	Fermentation Tank
30201099	OTHER/NOT CLASI**

Wines, Brandy, and Brandy Spirits

30201103	Aging
30201104	Fermentation Tank
30201105	Fermentation at 52 F
30201106	Fermentation at 30 F
30201199	Other Not Classified

Fish Processing

30201201	Cookers: Fresh Fish Scrap
30201202	Cookers: Stale Fish Scrap
30201203	DRYERS **
30201204	Canning Cookers
30201205	Steam Tube Dryer
30201206	Direct Fired Dryer
30201299	OTHER/NOT CLASI**

Meat Smokehouses

30201301	Combined Operations

Starch Manufacturing

30201401	Combined Operations

FOOD AND AGRICULTURE

Sugar Cane Processing

30201501	General
30201599	Other Not Classified

Sugar Beet Processing

30201601	Dryer
30201699	Other Not Classified

Peanut Processing

30201799	Other Not Classified

Candy Manufacturing

30201899	Other Not Classified

Vegetable Oil Processing

30201906	Corn Oil: General
30201907	Cottonseed Oil: General
30201908	Soybean Oil: General
30201909	Peanut Oil: General

VEGATABLIE OIL PROCESSING

General Processes

30201916	Oil Extraction
30201917	Meal Preparation
30201918	Oil Refining
30201919	Fugitive Leaks
30201920	Solvent Storage
30201999	Other Not Classified

FOOD AND AGRICULTURE

Beef Cattle Feedlots

30202001	Feed Lots: General
30202002	Feed Lots: General

Poultry and Egg Production

30202101	Manure Handling: Dry
30202102	Manure Handling: Dry
30202105	Manure Handling: Wet
30202106	Manure Handling: Wet

Cotton Seed Delinting

30202201	Acid Delinting of Cotton Seeds

Seed Production and Processing

30202601	Seed Handling: General

Mushroom Growing

30202801	General

Dariy Products

30203001	Milk: Spray Dryer
30203099	Other Not Classified

Export Grain Elevators

30203103	Cleaning
30203104	Drying
30203105	Unloading
30203106	Loading
30203107	Removal from Bins (Tunnel Belt)
30203108	Elevator Legs (Headhouse)
30203109	Tripper (Gallery Belt)
30203110	Removal from Bins (Tunnel Belt)
30203111	Elevator Legs (Headhouse)

Bakeries

30203201	Bread Baking: Sponge-Dough Process
30203202	Bread Baking: Straight-Dough Process
30203299	Other Not Classified

Tobacco Processing

30203399	Other Not Classified

Deep Fat Frying

30203601	Cooking Vats: General

FOOD AND AGRICULTURE

FOOD AND AGRICULTURE

Animal/Poultry Rendering

30203801	General

Carob Kibble

30203901	Roaster

Cereal

30204001	Dryer

Fugitive Emissions

30288801	Specify in Comments Field
30288802	Specify in Comments Field
30288803	Specify in Comments Field
30288804	Specify in Comments Field
30288805	Specify in Comments Field

Other Not Classified

30299998	Other Not Classified
30299999	Other Not Classified

FUEL FIRED EQUIPMENT

Process Heaters

30290001	Distillate Oil (No. 2)
30290002	Residual Oil
30290003	Natural Gas

PRIMARY METAL PRODUCTION

ALUMINUM ORE

Bauxite

30300001	Crushing/Handling
30300002	Drying Oven
30300003	Fine Ore Storage

PRIMARY METAL PRODUCTION

Aluminum Ore: Electro-Reduction

30300101	Prebaked Reduction Cell
30300102	Horizontal Stud Soderberg Cell
30300103	Vertical Stud Soderberg Cell
30300104	Materials Handling
30300105	Anode Baking Furnace
30300106	Degassing
30300107	Roof Vents
30300108	Prebake: Fugitive Emissions
30300109	H.S.S.: Fugitive Emissions
30300110	V.S.S.: Fugitive Emissions
30300111	Anode Baking: Fugitive Emissions
30300199	NOT CLASSIFIED **

Aluminum Hydroxide Calcing

30300201	Overall Process

By-Product Coke Manufacturing

30300302	Oven Charging
30300303	Oven Pushing
30300304	Quenching
30300305	Coal Unloading
30300306	Oven Underfiring
30300307	Coal Crushing/ Handling
30300308	Oven/Door Leaks
30300309	Coal Conveying
30300310	Coal Crushing
30300311	Coal Screening
30300312	Coke: Crushing/ Screening/Handling
30300313	Coal Preheater
30300314	Topside Leaks
30300315	Gas By-Product Plant
30300316	Coal Storage Pile
30300399	NOT CLASSIFIED **

Coke Manufacture: Beehive Process

30300401	General

Primary Copper Smelting

30300502	Multiple Hearth Roaster
30300503	Reverberatory Smelting Furnace after Roaster
30300504	Converter (All Configurations)
30300505	Fire (Furnace) Refining
30300506	Ore Concentrate Dryer

PRIMARY METAL PRODUCTION

PRIMARY METAL PRODUCTION

Primary Copper Smelting

30300507	Reverb. Smelt. Furnace w/ Ore Charge w/o Roasting
30300508	Refined Metal Finishing Operations
30300509	Fuidized Bed Roaster
30300510	Electric Smelting Furnace
30300511	Electrolytic Refining
30300512	Flash Smelting
30300513	Roasting: Fugitive Emissions
30300514	Reverberatory Furnace: Fugitive Emissions
30300515	Converter: Fugitive Emissions
30300516	Anode Refining Furnace: Fugitive Emissions
30300517	Slag Cleaning Furnace: Fugitive Emissions
30300518	Converter Slag Return: Fugitive Emissions
30300519	Unpaved Road Traffic: Fugitive Emissions
30300521	Noranda Reactor
30300522	Slag Cleaning Furnace
30300523	Reverberatory Furnace w/ Converter
30300524	AFT MHR+RF/FBR+EF **
30300525	Fluid Bed Roaster w/ Reverb. Furnace and Converter
30300526	Concentrate Dryer w/ Elect. Furn., Cleaning Furn.& Convertor
30300527	Concentrate Dryer w/ Flash Furnace and Converter
30300528	Norander Reactor and Converter
30300529	Multiple Hearth Roaster w/ Reverb. Furnace + Converter
30300530	Fluid Bed Roaster w/ Electric Furnace & Converter
30300531	Reverberatory Furnace after Multiple Hearth Roast.
30300532	Reverberatory Furnace after Fluid Bed Roaster
30300533	Electric Furnace after Concentrate Dryer
30300534	Flash Furnace after Concentrate Dryer
30300535	Electric Furnace after Fluid Bed Roaster
30300599	Other Not Classified

FERROALLOY

Open Furnace

30300601	50% FeSi: Electric Smelting Furnace
30300602	75% FeSi: Electric Smelting Furnace
30300603	90% FeSi: Electric Smelting Furnace
30300604	Silicon Metal: Electic Smelting Furnace
30300605	Silicomanaganese: Electric Smelting Furnace
30300606	80% Ferromanganese
30300607	80% Ferrochromium
30300610	Ore Screening
30300611	Ore Dryer
30300613	Raw Material Storage
30300614	Raw Material Transfer
30300615	Ferromanaganese: Blast Furnace
30300616	Ferrosilicon: Blast Furnace
30300617	Cast House
30300699	Other Not Classified

Semi-Covered Furnace

30300701	Ferromanaganese: Electric Arc Furnace
30300702	Electric Arc Furnace: Other Alloys/Specify
30300703	Ferrochromium: Electric Arc Furnace
30300704	Ferrochromium Silicon: Electric Arc Furnace

IRON PRODUCTION

Blast Furnaces

30300801	Ore Charging
30300802	Agglomerate Charging

Blast Furnace Slag

30300804	Loader: Hi-Silt
30300805	Loader: Low-Silt
30300808	Slag Crushing and Sizing
30300809	Slag Removal and Dumping

Sintering

30300811	Raw Mat. St'kpiles, Coke Breeze, Limestone, Ore Fines
30300812	Raw Material Transfer/Handling
30300813	Windbox

PRIMARY METAL PRODUCTION

IRON PRODUCTION

Sintering

30300814	Discharge End
30300815	Sinter Breaker
30300816	Hot Screening
30300817	Cooler
30300818	Cold Screening
30300819	Sinter Process (Combined Code includes 15, 16,17,18)
30300820	Sinter Converor: Transfer Station

Blast Furnaces

30300821	Unload Ore, Pellets, Limestone, into Blast Furn.
30300822	Raw Mat'l Stkpl: Ore, Pellets, Limestone, Coke, Sinter
30300823	Charge Materials: Transfer/Handling
30300824	Blast Heating Stoves
30300825	Cast House
30300826	Blast Furnace Slips
30300827	Lump Ore Unloading

Fugitive Emissions: Roads

30300831	Unpaved Roads: LDV
30300832	Unpaved Roads: MDV
30300833	Unpaved Roads: HDV
30300834	Paved Roads: All Vehicle Types

Miscellaneous Matl. Handlng

30300841	Flue Dust Unloading
30300842	Blended Ore Unloading

Fugitive Emissions: Roads

30300899	SEE COMMENT **

PRIMARY METAL PRODUCTION

Steel Production

30300901	Open Hearth Furnace: Stack
30300904	Electric Arc Furnace: Alloy Steel (Stack)
30300906	Charging: Electric Arc Furnace
30300907	Tapping: Electric Arc Furnace
30300908	Electric Arc Furnace: Carbon Steel (Stack)
30300910	Pickling
30300911	Soaking Pits
30300912	Grinding
30300913	Basic Oxygen Furnace: Open Hood-Stack
30300914	Basic Oxygen Furnace: Closed Hood-Stack
30300915	Hot Metal (Iron) Transfer to Steelmaking Furnace
30300916	Charging: BOF
30300917	Tapping: BOF
30300918	Charging: Open Hearth
30300919	Tapping: Open Hearth
30300920	Hot Metal Desulfurization
30300921	Teeming (Unleaded Steel)
30300922	Continuous Casting
30300923	Steel Furnace Slag Tapping and Dumping
30300924	Steel Furnace Slag Processing
30300925	Teeming (Leaded Steel)
30300931	Hot Rolling
30300932	Scarfing
30300933	Reheat Furnaces
30300934	Heat Treating Furnaces: Annealing
30300935	Cold Rolling
30300936	Coating: Tin, Zinc, etc.
30300998	Other Not Classified
30300999	Other Not Classified

Lead Production

30301001	Sintering: Single Stream
30301002	Blast Furnace Operation
30301003	Dross Reverberatory Furnace
30301004	Ore Crushing
30301005	Materials Handling (Includes 11, 12, 13, 04, 14)
30301006	Sintering: Dual Stream Feed End
30301007	Sintering: Dual Stream Discharge End
30301008	Slag Fume Furnace
30301009	Lead Drossing
30301010	Raw Material Crushing and Grinding
30301011	Raw Material Unloading
30301012	Raw Material Storage Piles
30301013	Raw Material Material Transfer
30301014	Sintering Charge Mixing
30301015	Sinter Crushing/ Screening
30301016	Sinter Transfer
30301017	Sinter Fines Return Handling

PRIMARY METAL PRODUCTION

PRIMARY METAL PRODUCTION

Lead Production

30301018	Blast Furnace Charging
30301019	Blast Furnace Tapping (Metal and Slag)
30301020	Blast Furnace Lead Pouring
30301021	Blast Furnace Slag Pouring
30301022	Lead Refining/ Silver Retort
30301023	Lead Casting
30301024	Reverberatory or Kettle Softening
30301025	Sinter Machine Leakage
30301026	Sinter Dump Area
30301099	Other Not Classified

Molybedenum Ore Mining

30301101	Mining: General
30301102	Milling: General
30301199	Other Not Classified

Titanium Processing

30301201	Chlorination
30301202	Drying Titanium Sand Ore (Cyclone Exit)
30301299	Other Not Classified

Gold Processing

30301301	General

Barium Ore Processing

30301401	Ore Grinding
30301402	Reduction Kiln
30301403	Dryers/Calciners
30301499	Other Not Classified

Taconite Iron Ore Processing

30302301	Primary Crushing
30302302	Fines Crushing
30302303	Ore Screening
30302304	Ore Transfer
30302305	Ore Storage
30302306	Dry Grinding/Milling
30302307	Bentonite Storage
30302308	Bentonite Blending
30302309	Traveling Grate Feed
30302310	Traveling Grate Discharge
30302311	Chip Regrinding
30302312	Indurating Furnace: Gas Fired
30302313	Indurating Furnace: Oil Fired
30302314	Indurating Furnace: Coal Fired
30302315	Pellet Cooler
30302316	Pellet Transfer
30302321	Haul Road: Rock
30302322	Haul Road: Taconite

METAL MINING

General Processes

30302401	Primary Crushing: Low Moisture Ore
30302402	Secondary Crushing: Low Moisture Ore
30302403	Tertiary Crushing: Low Moisture Ore
30302404	Material Handling: Low Moisture Ore
30302405	Primary Crushing: High Moisture Ore
30302406	Secondary Crushing: High Moisture Ore
30302407	Tertiary Crushing: High Moisture Ore
30302408	Material Handling: High Moisture Ore
30302409	Dry Grinding w/ Air Conveying
30302410	Dry Grinding w/o Air Conveying
30302411	Ore Drying

PRIMARY METAL PRODUCTION

Zinc Production

30303002	Multiple Hearth Roaster
30303003	Sinter Strand
30303005	Vertical Retort/ Electrothermal Furnace
30303006	Electrolytic Processor
30303007	Flash Roaster
30303008	Fluid Bed Roaster
30303009	Raw Material Handling and Transfer
30303010	Sinter Breaking and Cooling
30303011	Zinc Casting
30303012	Raw Material Unloading
30303014	Crushing/Screening
30303015	Zinc Melting
30303016	Alloying
30303099	SEE COMMENT **

PRIMARY METAL PRODUCTION

PRIMARY METAL PRODUCTION

Fugitive Emissions

30388801	Specify in Comments Field
30388802	Specify in Comments Field
30388803	Specify in Comments Field
30388804	Specify in Comments Field
30388805	Specify in Comments Field

Primary Metal Production: Other Not Classified

30399999	Other Not Classified

FUEL FIRED EQUIPMENT

Process Heaters

30390001	Distillate Oil (No. 2)
30390002	Residual Oil
30390003	Natural Gas
30390004	Process Gas

Incinerators

30390011	Distillate Oil (No. 2)
30390012	Residual Oil
30390013	Natural Gas
30390014	Process Gas

Flares

10390021	Distillate Oil (No. 2)
30390022	Residual Oil
30390023	Natural Gas
30390024	Process Gas

SECONDARY METAL PRODUCTION

SECONDARY METAL PRODUCTION

Secondary Aluminum Production

30400101	Sweating Furnace
30400102	Smelting Furnace/ Crucible
30400103	Smelting Furnace/ Reverberatory
30400104	Fluxing: Chlorination
30400105	Fluxing: Fluoridation
30400106	Degassing
30400107	Hot Dross Processing
30400108	Crushing/Screening
30400109	Burning/Drying
30400110	Foil Rolling
30400111	Foil Converting
30400112	Annealing Furnace
30400113	Slab Furnace
30400114	Pouring/Casting
30400120	Can Manufacture
30400150	Rolling/Drawing /Extruding
30400199	Other Not Classified

Secondary Copper Production

30400204	Electric Induction Furnace **
30400207	Scrap Dryer (Rotary)
30400208	Wire Burning: Incinerator
30400209	Sweating Furnace
30400299	Other Not Classified

SECONDARY COPPER PRODUCTION

Cupolas

30400210	Charge w/ Scrap Copper
30400211	Charge w/ Insulated Copper Wire
30400212	Charge w/ Scrap Copper and Brass

Reverberatory Furnace

30400214	Charge w/ Copper
30400215	Charge w/ Brass and Bronze

Rotary Furnace

30400217	Charge w/ Brass and Bronze

Crucible & Pot Furnace

30400219	Charge w/ Brass and Bronze

Electric Arc Furnace

30400220	Charge w/ Copper
30400221	Charge w/ Brass and Bronze

SECONDARY METAL PRODUCTION

SECONDARY COPPER PRODUCTION

Electric Induction

30400223	Charge w/ Copper
30400224	Charge w/ Brass and Bronze

Fugitive Emissions

30400230	Scrap Metal Pretreatment
30400231	Scrap Dryer
30400232	Wire Incinerator
30400233	Sweating Furnace
30400234	Cupola Furnace
30400235	Reverberatory Furnace
30400236	Rotary Furnace
30400237	Crucible Furnace
30400238	Electric Induction Furnace
30400239	Casting Operations

SECONDARY METAL PRODUCTION

Gray Iron Foundries

30400301	Cupola
30400302	Reverberatory Furnace
30400303	Electric Induction Furnace
30400304	Electric Arc Furnace
30400305	Annealing Operation
30400310	Inoculation
30400315	Charge Handling
30400320	Pouring/Casting
30400325	Castings Cooling
30400330	MISC CAST-FABCT**
30400331	Casting Shakeout
30400332	Casting Knock Out
30400333	Shakeout Machine
30400340	Grinding/Cleaning
30400341	Casting Cleaning/ Tumblers
30400342	Casting Cleaning/ Chippers
30400350	Sand Grinding / Handling
30400351	Core Ovens
30400352	Sand Grinding / Handling
30400353	Core Ovens
30400354	Core Ovens
30400355	Sand Dryer
30400356	Sand Silo
30400357	Conveyors/Elevators
30400358	Sand Screens
30400360	Castings Finishing
30400370	Shell Core Machine
30400371	Core Machines/Other
30400398	Other Not Classified
30400399	Other Not Classified

Secondary Lead Production

30400401	Pot Furnace
30400402	Reverberatory Furnace
30400403	Blast Furnace (Cupola)
30400404	Rotary Sweating Furnace
30400405	Reverberatory Sweating Furnace
30400406	Pot Furnace Heater: Distillate Oil
30400407	Pot Furnace Heater: Natural Gas
30400408	Barton Process Reactor (Oxidation Kettle)
30400409	Casting
30400410	Battery Breaking
30400411	Scrap Crushing
30400412	Sweating Furnace: Fugitive Emissions
30400413	Smelting Furnace: Fugitive Emissions
30400414	Kettle Refining: Fugitive Emissions
30400499	Other Not Classified

Lead Battery Manufacture

30400501	Overall Process **
30400502	Casting Furnace **
30400503	Paste Mixer **
30400504	Three Process Operation **
30400505	Overall Process
30400506	Grid Casting
30400507	Paste Mixing
30400508	Lead Oxide Mill (Baghouse Outlet)
30400509	Three Process Operation
30400510	Lead Reclaiming Furnace
30400511	Small Parts Casting
30400512	Formation
30400513	Barton Process: Oxidation Kettle
30400521	Overall Process
30400522	Grid Casting
30400523	Paste Mixing
30400524	Lead Oxide Mill (Baghouse Outlet)
30400525	Three Process Operation
30400526	Lead Reclaiming Furnace
30400527	Small Parts Casting
30400528	Formation
30400529	Grid Cast/Paste Mix: Combined Operation
30400530	Paste Mix/Lead Charge: Combined Operation

SECONDARY METAL PRODUCTION

SECONDARY METAL PRODUCTION

Lead Battery Manufacture

30400599	Other Not Classified

Magnesium

30400601	Pot Furnace
30400699	Other Not Classified

Steel Foundries

30400701	Electric Arc Furnace
30400702	Open Hearth Furnace
30400703	Open Hearth Furnace w/ Oxygen Lance
30400704	Heat Treating Furnace
30400705	Electric Induction Furnace
30400706	Sand Grinding / Handling
30400707	Core Ovens
30400708	Pouring/Casting
30400709	Casting Shakeout
30400710	Casting Knock Out
30400711	Cleaning
30400712	Charge Handling
30400713	Castings Cooling
30400714	Shakeout Machine
30400715	Finishing
30400716	Sand Grinding / Handling
30400717	Core Ovens
30400718	Core Ovens
30400720	Sand Dryer
30400721	Sand Silo
30400722	Muller
30400723	Conveyors/Elevators
30400724	Sand Screens
30400725	Casting Cleaning / Tumblers
30400726	Casting Cleaning / Chippers
30400730	Shell Core Machine
30400731	Core Machines/Other
30400799	Other Not Classified

Secondary Zinc Production

30400801	Retort Furnace
30400802	Horizontal Muffle Furnace
30400803	Pot Furnace
30400805	Galvanizing Kettle
30400806	Calcining Kiln
30400807	Concentrate Dryer
30400809	Rotary Sweat Furnace
30400810	Muffle Sweat Furnace
30400811	Electric Resistance Sweat Furnace
30400812	Crushing/Screening of Zinc Residues
30400814	Kettle-Sweat Furnace (Clean Metallic Scrap)
30400818	Reverberatory Sweat Furnace (Clean Metallic Scrap)
30400824	Kettle-Sweat Furnace (General Metallic Scrap)
30400828	Reverb. Sweat Furnace (General Metallic Scrap)
30400834	Kettle-Sweat Furnace (Residual Metallic Scrap)
30400838	Reverb. Sweat Furnace (Residual Metallic Scrap)
30400840	Alloying
30400841	Scrap Melting: Crucible
30400842	Scrap Melting: Reverberatory Furnace
30400843	Scrap Melting: Electric Induction Furnace
30400851	Retort and Muffle Distillation: Pouring
30400852	Retort and Muffle Distillation: Casting
30400853	Graphite Rod Distillation
30400854	Retort Distillation / Oxidation
30400855	Muffle Distillation / Oxidation
30400861	Reverberatory Sweating
30400862	Rotary Sweating
30400863	Muffle Sweating
30400864	Kettle (Pot) Sweating
30400865	Electric Resistance Sweating
30400866	Sodium Carbonate Leaching
30400867	Kettle (Pot) Melting Furnace
30400868	Crucible Melting Furnace
30400869	Reverberatory Melting Furnace
30400870	Electric Induction Melting Furnace
30400871	Alloying Retort Distillation
30400872	Retort and Muffle Distillation
30400873	Casting
30400874	Graphite Rod Distillation
30400875	Retort Distillation /Oxidation
30400876	Muffle Distillation /Oxidation
30400877	Retort Reduction
30400899	Other Not Classified

Malleable Iron

30400901	Annealing
30400999	Other Not Classified

SECONDARY METAL PRODUCTION

SECONDARY METAL PRODUCTION

Nickel Production

30401001	Flux Furnace
30401002	Mixing/Blending/ Grinding/Screening
30401004	Heat Treat Furnace
30401005	Induction Furnace (Inlet Air)
30401006	Induction Furnace (Under Vacuum)
30401007	Electric Arc Furnace w/ Carbon Electrode
30401008	Electric Arc Furnace
30401010	Finishing: Pickling /Neutralizing
30401011	Finishing: Grinding
30401015	Multiple Hearth Roaster
30401016	Converters
30401017	Reverberatory Furnace
30401018	Electric Furnace
30401019	Sinter Machine
30401061	Roasting: Fugitive Emissions
30401062	Reverberatory Furnace: Fugitive Emissions
30401063	Converter: Fugitive Emissions
30401099	Other Not Classified

Furnace Electrode Manufacture

30402001	Calcination
30402002	Mixing
30402003	Pitch Treating
30402004	Bake Furnaces
30402099	Other Not Classified

Metal Heat Treating

30402201	Furnace: General
30402210	Quench Bath
30402211	Quenching

Lead Cable Coating

30404001	General

Miscellaneous Casting and Fabricating

30404901	Wax Burnout Oven
30404902	Wax Burnout Oven
30404999	Wax Burnout Oven
30405001	Other Not Classified
30405099	Other Not Classified

Fugitive Emissions

30488801	Specify in Comments Field
30488802	Specify in Comments Field
30488803	Specify in Comments Field
30488804	Specify in Comments Field
30488805	Specify in Comments Field

Secondary Metal Production: Other Not Classified

30499999	Specify in Comments Field

FUEL FIRED EQUIPMENT

Process Heaters

30490001	Distillate Oil (No. 2)
30490002	Residual Oil
30490003	Natural Gas
30490004	Process Gas

Incinerators

30490011	Distillate Oil (No. 2)
30490012	Residual Oil
30490013	Natural Gas
30490014	Process Gas

Flares

30490021	Distillate Oil (No. 2)
30490022	Residual Oil
30490023	Natural Gas
30490024	Process Gas

Furnaces

30490031	Distillate Oil
30490032	Residual Oil
30490033	Natural Gas
30490034	Process Gas

MINERAL PRODUCTS

MINERAL PRODUCTS

Asphalt Roofing Manufacture

30500101	Asphalt Blowing: Saturant

MINERAL PRODUCTS

MINERAL PRODUCTS

Asphalt Roofing Manufacture

30500102	Asphalt Blowing: Coating
30500103	Felt Saturation: Dipping Only
30500104	Felt Saturation: Dipping/Spraying
30500105	GENERAL **
30500110	Blowing
30500111	Dipping Only
30500112	Spraying Only
30500113	Dipping/Spraying
30500198	Other Not Classified
30500199	SEE COMMENT **

Asphaltic Concrete

30500201	Rotary Dryer: Conventional Plant
30500202	Hot Elevators, Screens, Bins and Mixer
30500203	Storage Piles
30500204	Cold Aggregate Handling
30500205	Drum Dryer: Hot Asphalt Plants
30500206	Asphalt Heater: Natural Gas
30500207	Asphalt Heater: Residual Oil
30500208	Asphalt Heater: Distillate Oil
30500209	Asphalt Heater: L P G
30500211	Rotary Dryer-Conventional Plant, w/ Cyclone
30500299	SEE COMMENT **

Brick Manufacture

30500301	Raw Material Drying
30500302	Raw Material Grinding
30500303	Storage of Raw Materials
30500304	CURING **
30500307	Calcining
30500308	Screening
30500309	Blending and Mixing
30500310	Curing and Firing: Saw-Dust Fired Tunnel Kilns
30500311	Curing and Firing: Gas Fired Tunnel Kilns
30500312	Curing and Firing: Oil Fired Tunnel Kilns
30500313	Curing and Firing: Coal Fired Tunnel Kilns
30500314	Curing and Firing: Gas Fired Periodic Kilns
30500315	Curing and Firing: Oil Fired Periodic Kilns
30500316	Curing and Firing: Coal Fired Periodic Kilns
30500398	Other Not Classified
30500399	Other Not Classified **

Calcium Carbide

30500401	Electric Furnace (Hoods and Main Stack)
30500402	Coke Dryer
30500403	Furnace Room Vents
30500404	Tap Fume Vents
30500405	Primary/Secondary Crushing
30500406	Circular Charging: Conveyor
30500499	Other Not Classified

Castable Refractory

30500501	Raw Material Dryer
30500502	Raw Material Crushing/Processing
30500503	Electric Arc Melt Furnace
30500504	Curing Oven
30500505	Molding and Shakeout
30500598	Other Not Classified
30500599	Other Not Classified

Cement Manufacturing: Dry Process

30500606	Kilns
30500607	Raw Material Unloading
30500608	Raw Material Piles
30500609	Primary Crushing
30500610	Secondary Crushing
30500611	Screening
30500612	Raw Material Transfer
30500613	Raw Material Grinding and Drying
30500614	Clinker Cooler
30500615	Clinker Piles
30500616	Clinker Transfer
30500617	Clinker Grinding
30500618	Cement Silos
30500619	Cement Load Out
30500699	Other Not Classified

Cement Manufacturing: Wet Process

30500706	Kilns
30500707	Raw Material Unloading
30500708	Raw Material Piles
30500709	Primary Crushing

MINERAL PRODUCTS

MINERAL PRODUCTS

Cement Manufacturing: Wet Process

30500710	Secondary Crushing
30500711	Screening
30500712	Raw Material Transfer
30500714	Clinker Cooler
30500715	Clinker Piles
30500716	Clinker Transfer
30500717	Clinker Grinding
30500718	Cement Silos
30500719	Cement Load Out
30500799	Other Not Classified

Ceramic Clay Mfg.

30500801	Drying
30500802	Grinding
30500803	Storage
30500899	Other Not Classified

Clay & Fly Ash Sintering

30500901	Fly Ash Sintering
30500902	Clay/Coke Sintering
30500903	Natural Clay/ Shale Sintering
30500904	Raw Clay/ Shale Crushing/ Screening
30500905	Raw Clay/ Shale Transfer/ Conveying
30500906	Raw Clay/Shale Storage Piles
30500907	Sintered Clay/Coke Product Crushing/ Screening
30500908	Sintered Clay/Shale Product Crushing/ Screening
30500909	Expanded Shale Clinker Cooling
30500910	Expanded Shale Storage
30500915	Rotary Kiln
30500916	Dryer
30500917	Clay Reciprocating Grate Clinker Cooler
30500999	Other Not Classified

COAL CLEANING

Thermal Dryer

30501001	Fluidized Bed
30501002	Flash or Suspension
30501003	Multilouvered
30501004	Rotary
30501005	Cascade
30501006	Continuous Carrier
30501007	Screen

Material Handling

30501008	Unloading
30501009	Raw Coal Storage
30501010	Crushing
30501011	Coal Transfer
30501012	Screening
30501013	Air Tables
30501014	Cleaned Coal Storage
30501015	Loading
30501016	Loading: Clean Coal
30501017	Secondary Crushing

MINERAL PRODUCTS

Surface Mining Operations

30501021	Overburden Removal
30501022	Drilling/Blasting
30501023	Loading
30501024	Hauling
30501030	Topsoil Removal
30501031	Scrapers: Travel Mode
30501032	Topsoil Unloading
30501033	Overburden
30501034	Coal Seam: Drilling
30501035	Blasting: Coal Overburden
30501036	Dragline: Overburden Removal
30501037	Truck Loading: Overburden
30501038	Truck Loading: Coal
30501039	Hauling: Haul Trucks
30501040	Truck Unloading: End Dump-Coal
30501041	Truck Unloading: Bottom Dump-Coal
30501042	Truck Unloading: Bottom Dump-Overburden
30501043	Open Storage Pile: Coal
30501044	Train Loading: Coal
30501045	Bulldozing: Overburden
30501046	Bulldozing: Coal
30501047	Grading
30501048	Overburden Replacement
30501049	Wind Erosion: Exposed Areas
30501050	Vehicle Traffic: Light/Medium Vehicles
30501090	Haul Roads: General
30501099	Other Not Classified

MINERAL PRODUCTS

MINERAL PRODUCTS

Concrete Batching

30501101	General (Non-fugitive)
30501106	Transfer: Sand/Aggregate to Elevated Bins
30501107	Cement Unloading: Storage Bins
30501108	Weight Hopper Loading of Cement Sand/Aggregate
30501109	Mixer Loading of Cement /Sand/Aggregate
30501110	Loading of Transit Mix Truck
30501111	Loading of Dry-Batch Truck
30501112	Mixing: Wet
30501113	Mixing: Dry
30501114	Transferring: Conveyors/Elevators
30501115	Storage: Bins/ Hoppers
30501120	Asbestos/Cement Products
30501199	Other Not Classified

FIBERGLASS MANUFACTURING

Wool-Type Fiber

30501201	Regenerative Furnace
30501202	Recuperative Furnace
30501203	Electric Furnace
30501204	Forming: Rotary Spun
30501205	Curing Oven: Rotary Spun
30501206	Cooling
30501207	Unit Melter Furnace
30501208	Forming: Flame Atteunation
30501209	Curing: Flame Atteunation

Textile-Type Fiber

30501211	Regenerative Furnace
30501212	Recuperative Furnace
30501213	Unit Melter Furnace
30501214	Forming Process
30501215	Curing Oven

Raw Materials Handling

30501221	Raw Material: Unloading/Conveying
30501222	Raw Material: Storage Bins
30501223	Raw Material: Mixing/Weighing
30501224	Raw Material: Crushing/Charging
30501299	Other Not Classified

MINERAL PRODUCTS

Frit Manufacture

30501301	General
30501399	Other Not Classified

Glass Manufacture

30501401	FURNACE/GENERAL**
30501402	Container Glass: Melting Furnace
30501403	Flat Glass: Melting Furnace
30501404	Pressed and Blown Glass: Melting Furnace
30501406	Container Glass: Forming/Finishing
30501407	Flat Glass: Forming/Finishing
30501408	Pressed and Blown Glass: Forming/Finishing
30501410	Raw Material Handling (All Types of Glass)
30501411	GENERAL **
30501412	HOLD TANKS **
30501413	Cullet: Crushing/Grinding
30501414	Ground Cullet Beading Furnace
30501415	Glass Etching w/ Hydrofluoric Acid Solution
30501499	SEE COMMENT **

Gypsum Manufacture

30501501	Rotary Ore Dryer
30501502	Primary Grinder/Roller Mills
30501503	NOT CLASSIFIED **
30501504	Conveying
30501505	Prmiary Crushing: Gypsum Ore
30501506	Secondary Crushing: Gypsum Ore
30501507	Screening: Gypsum Ore
30501508	Stockpile: Gypsum Ore
30501509	Storage Bins: Gypsum Ore
30501510	Storage Bins: Landplaster
30501511	Continuous Kettle: Calciner
30501512	Flash Calciner
30501513	Impact Mill
30501514	Storage Bins: Stucco
30501515	Tube/Ball Mills
30501516	Mixers
30501517	Bagging
30501518	Mixers/Conveyors
30501519	Forming Line

MINERAL PRODUCTS

Gypsum Manufacture

30501520	Drying Kiln
30501521	End Sawing (8 Ft.)
30501522	End Sawing (12 Ft.)
30501599	SEE COMMENT **

Lime Manufacture

30501601	Primary Crushing
30501602	Secondary Crushing /Screening
30501603	Calcining: Vertical Kiln
30501604	Calcining: Rotary Kiln
30501605	Calcimatic Kiln
30501606	Fluidized Bed Kiln
30501607	Raw Material Transfer and Conveying
30501608	Raw Material Unloading
30501609	Hydrator: Atmospheric
30501610	Raw Material Storage Piles
30501611	Prodcut Cooler
30501612	Pressure Hydrator
30501613	Lime Silos
30501614	Packing/Shipping
30501615	Product Transfer and Conveying
30501616	Primary Screening
30501617	Multiple Hearth Calciner
30501699	SEE COMMENT **

Mineral Wool

30501701	Cupola
30501702	Reverberatory Furnace
30501703	Blow Chamber
30501704	Curing Oven
30501705	Cooler
30501799	Other Not Classified

Perlite Mfg.

30501801	Vertical Furnace
30501899	Other Not Classified

Phosphate Rock

30501901	Drying
30501902	Grinding
30501903	Transfer/Storage
30501904	Open Storage
30501905	Calcining
30501906	Rotary Dryer
30501907	Ball Mill
30501999	Other Not Classified

Stone Quarrying/Processing

30502001	Primary Crushing
30502002	Secondary Crushing /Screening
30502003	Tertiary Crushing /Screening
30502004	Recrushing/Screening
30502005	Fines Mill
30502006	Miscellaneous Operations: Screen /Convey/Handling
30502007	Open Storage
30502008	Cut Stone: General
30502009	Blasting: General
30502010	Drilling
30502011	Hauling
30502012	Drying
30502013	Bar Grizzlies
30502014	Shaker Screens
30502015	Vibrating Screens
30502016	Revolving Screens
30502020	Drilling
30502099	NOT CLASSIFIED **

Salt Mining

30502101	General
30502102	Granulation: Stack Dryer
30502103	Filtration: Vacuum Filter
30502104	Crushing
30502105	Screening
30502106	Conveying

Potash Production

30502201	Mine: Grinding/Drying
30502299	Other Not Classified

Magnesium Carbonate

30502401	Mine/Process: General
30502499	Other Not Classified

Sand/Gravel

30502501	TOTAL PLNT-GENL**
30502502	Aggregate Storage
30502503	Material Transfer and Conveying
30502504	Hauling

MINERAL PRODUCTS

Sand/Gravel

30502505	Pile Forming: Stacker
30502506	Bulk Loading
30502507	Storage Piles
30502508	Dryer
30502509	Cooler
30502510	Crushing
30502511	Screening
30502599	NOT CLASSIFIED **

Diatomacous Earth

30502601	Handling
30502699	Other Not Classified

Ceramic Electric Parts

30503099	Other Not Classified

Asbestos Mining

30503101	Surface Blasting
30503102	Surface Drilling
30503103	Cobbing
30503104	Loading
30503105	Convey/Haul Asbestos
30503106	Convey/Haul Waste
30503107	Unloading
30503108	Overburden Stripping
30503109	Ventilation of Process Operations
30503110	Stockpiling
30503111	Tailing Piles
30503199	Other Not Classified

Asbestos Milling

30503201	Crushing
30503202	Drying
30503203	Recrushing
30503204	Screening
30503205	Fiberizing
30503206	Bagging
30503299	Other Not Classified

Vermiculite

30503301	General

Feldspar

30503401	Ball Mill
30503402	Dryer

Pyrrhotite

30503901	Fluid Bed Roaster
30503902	Reduction Kiln

Mining & Quarrying of Nonmetallic Minerals

30504001	Open Pit Blasting
30504002	Open Pit Drilling
30504003	Open Pit Cobbing
30504010	Underground Ventilation
30504020	Loading
30504021	Convey/Haul Material
30504022	Convey/Haul Waste
30504023	Unloading
30504024	Overburden Stripping
30504025	Stockpiling
30504030	Primary Crusher
30504031	Secondary Crusher
30504032	Ore Concentrator
30504033	Ore Dryer
30504034	Screening
30504036	Tailing Piles
30504099	Other Not Classified

Mica

30509001	Rotary Dryer
30509002	Fluid Energy Mill-Grinding

Sandspar

30509101	Rotary Dryer

Bulk Materials Elevators

30510001	Unloading
30510002	Loading
30510003	Removal from Bins
30510004	Drying
30510005	Cleaning
30510006	Elevator Legs (Headhouse)
30510007	Tripper (Gallery Belt)

MINERAL PRODUCTS

Bulk Materials Conveyors

30510101	Ammonium Sulfate
30510102	Cement
30510103	Coal
30510104	Coke
30510105	Limestone
30510106	Phosphate Rock
30510107	Scrap Metal
30510108	Sulfur
30510196	Chemical: Specify in Comments
30510197	Fertilizer: Specify in Comments
30510198	Mineral: Specify in Comments
30510199	Other Not Classified

Bulk Materials Storage Bins

30510201	Ammonium Sulfate
30510202	Cement
30510203	Coal
30510204	Coke
30510205	Limestone
30510206	Phosphate Rock
30510207	Scrap Metal
30510208	Sulfur
30510296	Chemical: Specify in Comments
30510297	Fertilizer: Specify in Comments
30510298	Mineral: Specify in Comments
30510299	Other Not Classified

Bulk Materials Open Stockpiles

30510301	Ammonium Sulfate
30510302	Cement
30510303	Coal
30510304	Coke
30510305	Limestone
30510306	Phosphate Rock
30510307	Scrap Metal
30510308	Sulfur
30510396	Chemical: Specify in Comments
30510397	Fertilizer: Specify in Comments
30510398	Mineral: Specify in Comments
30510399	Other Not Classified

Bulk Materials Unloading Operation

30510401	Ammonium Sulfate
30510402	Cement
30510403	Coal
30510404	Coke
30510405	Limestone
30510406	Phosphate Rock
30510407	Scrap Metal
30510408	Sulfur
30510496	Chemical: Specify in Comments
30510497	Fertilizer: Specify in Comments
30510498	Mineral: Specify in Comments
30510499	Other Not Classified

Bulk Materials Loading Operation

30510501	Ammonium Sulfate
30510502	Cement
30510503	Coal
30510504	Coke
30510505	Limestone
30510506	Phosphate Rock
30510507	Scrap Metal
30510508	Sulfur
30510596	Chemical: Specify in Comments
30510597	Fertilizer: Specify in Comments
30510598	Mineral: Specify in Comments
30510599	Other Not Classified

Calcining

30515001	Raw Material Handling
30515002	General
30515003	Grinding/Milling
30515004	Finished Product Handling
30515005	Mixing

Fugitive Emissions

30588801	Specify in Comments Field
30588802	Specify in Comments Field
30588803	Specify in Comments Field
30588804	Specify in Comments Field
30588805	Specify in Comments Field

Mineral Products: Other Not Classified

30599999	Specify in Comments Field

MINERAL PRODUCTS

FUEL FIRED EQUIPMENT

Process Heaters

30590001	Distillate Oil (No. 2)
30590002	Residual Oil
30590003	Natural Gas

Incinerators

30590011	Distillate Oil (No. 2)
30590012	Residual Oil
30590013	Natural Gas

Flares

30590023	Natural Gas

PETROLEUM INDUSTRY

PETROLEUM INDUSTRY

Process Heaters

30600101	OIL FIRED **
30600102	GAS FIRED **
30600103	Oil Fired
30600104	Gas Fired
30600105	Natural Gas-Fired
30600106	Process Gas-Fired
30600107	LPG Fired
30600108	Landfill Gas-Fired
30600111	Oil Fired (>100 MMBTU) Grade 6
30600199	Other Not Classified

Fluid Catalytic Cracking Units

30600201	Fluid Catalytic Cracking Unit
30600202	Catalyst Handling System
30600301	Thermal Catalytic Cracking Unit

Blowdown Systems

30600401	Blowdown System w/ Vapor Recovery System w/ Flaring
30600402	Blowdown System w/o Controls

Fugitive Emissions

30600503	Process Drains and Wastewater Separators
30600504	Process Drains and Wastewater Separators
30600505	Wastewater Treatment w/o Separator
30600506	Wastewater Treatment w/o Separator

Vacuum Distillate Column Condensors

30600602	Vacuum Distillation Column Condensor
30600603	Vacuum Distillation Column Condensor

Cooling Towers

30600701	Cooling Towers
30600702	Cooling Towers

Fugitive Emissions

30600801	Pipeline Valves and Flanges
30600802	Vessel Relief Valves
30600803	Pump Seals w/o Controls
30600804	Compressor Seals
30600805	Misc: Sampling/ Non-Asphalt Blowing /Purging/etc.
30600806	Pump Seals w/ Controls
30600807	Blind Changing

Pipeline Valves

30600811	Pipeline Valves: Gas Streams
30600812	Pipeline Valves: Light Liquid/Gas Stream
30600813	Pipeline Valves: Heavy Liquid Stream
30600814	Pipeline Valves: Hydrogen Streams
30600815	Open-ended Valves: All Streams
30600816	Flanges: All Streams
30600817	Pump Seals: Light Liquid/Gas Streams
30600818	Pump Seals: Heavy Liquid Streams
30600819	Compressor Seals: Gas Streams
30600820	Compressor Seals: Heavy Liquid Streams
30600821	Drains: All Streams
30600822	Vessel Relief Valves: All Streams

PETROLEUM INDUSTRY

PETROLEUM INDUSTRY

Flares

30600903	Natural Gas
30600904	Process Gas
30600905	Liquified Petroleum Gas
30600999	NOT CLASSIFIED **

Sludge Converter

30601001	General

Asphalt Blowing

30601101	Asphalt Blowing: General

Fluid Coking Units

30601201	Fluid Coking Units: General

Petroleum Coke Calcining

30601401	Coke Calciner

Bauxite Burning

30601599	Other Not Classified

Incinerators

30609901	Distillate Oil (No. 2)
30609902	Residual Oil
30609903	Natural Gas
30609904	Process Gas
30609905	Liquified Petroleum Gas

Lube Oil Refining

30610001	General

Fugitive Emissions

30688801	Specify in Comments Field
30688802	Specify in Comments Field
30688803	Specify in Comments Field
30688804	Specify in Comments Field
30688805	Specify in Comments Field

NOT CLASSIFIED

30699998	NOT CLASSIFIED **
30699999	NOT CLASSIFIED **

PULP AND PAPER AND WOOD PRODUCTS

PULP AND PAPER AND WOOD PRODUCTS

Sulfate (Kraft) Pulping

30700101	Digestor Relief and Blow Tank: General
30700102	Washer/Screens: General
30700103	Multi-Effect Evaporator: General
30700104	Recovery Furnace / Direct Contact Evaporator
30700105	Smelt Dissolving Tank: General
30700106	Lime Kiln: General
30700107	Turpentine Condensor: General
30700108	Fluid Bed Calciner: General
30700109	Liquor Oxidation Tower: General
30700110	Recovery Furnace / Indirect Contact Evaporator
30700199	Other Not Classified

Sulfite Pulping

30700203	Digester/Blow Pit/Dump Tank: All Bases except Ca
30700211	Digester/Blow Pit/Dump Tank: Calcium
30700212	Digester/Blow Pit/Dump Tank: MgO w/ Recovery Sys.
30700213	Digester/Blow Pit/Dump Tank: MgO w/ Process Change
30700214	Digester/Blow Pit/Dump Tank: NH3 w/ Process Change
30700215	Digester/Blow Pit/Dump Tank: Na w/ Process Change
30700221	Recovery System: MgO
30700222	Recovery System: NH3
30700223	Recovery System: Na
30700231	Acid Plant: NH3
30700232	Acid Plant: Na
30700233	Acid Plant: Ca
30700234	Knotters/Washers / Screens/etc.
30700299	SEE COMMENT **

PULP AND PAPER AND WOOD PRODUCTS

PULP AND PAPER AND WOOD PRODUCTS

Neutral Sulfite Semichemical Pulping

30700301	Digester/Blow Pit/Dump Tank: General
30700302	Evaporator: General
30700303	Fluid Bed Reactor: General
30700304	Sulfur Burner/ Absorbers: General

Pulpboard Manufacture

30700401	Paperboard: General
30700402	Fiberboard: General
30700499	SEE COMMENT **

Wood Pressure Treating

30700501	Cresote
30700597	Other Not Classified
30700598	Other Not Classified
30700599	Other Not Classified

Plywood/Particleboard Operations

30700701	General: Not Classified
30700702	Sanding Operations
30700703	Particleboard Drying
30700704	Waferboard Dryer
30700705	Hardboard: Coe Dryer
30700706	Hardboard: Predryer
30700707	Hardboard: Pressing
30700708	Hardboard: Tempering
30700709	Hardboard: Bake Oven
30700711	Fir-Sapwood-Steam Fired Dryer
30700712	Fir-Sapwood-Gas Fired Dryer
30700713	Fir-Heartwood Plywood Veneer Dryer
30700714	Larch Plywood Veneer Dryer
30700715	Souther Pine Plywood Veneer Dryer

Plywood/Particleboard Operations

30700716	Poplar-Wood Fired Veneer Dryer
30700798	Other Not Classified
30700799	Other Not Classified

Sawmill Operations

30700801	Log Debarking: General
30700802	Log Sawing: General
30700803	Sawdust Pile Handling: General
30700804	Sawing: Cyclone Exhaust
30700805	Planning/Trimming: Cyclone Exhaust
30700806	Sanding: Cyclone Exhaust
30700807	Sanderdust: Cyclone Exhaust
30700808	Other Cyclones: Exhaust
30700896	Other Not Classified
30700897	Other Not Classified
30700898	Other Not Classified
30700899	Other Not Classified

Paper Coating and Glazing

30701199	Extrusion Coating Line w/ Solvent Free Resin/Wax

Miscellaneous Paper Products

30701301	Shredding Newspaper for Insulation Mfg.
30701399	Other Not Classified

Furniture Manufacture

30702098	Other Not Classified
30702099	Other Not Classified

Miscellaneous Woodworking Operations

30703001	Wood Waste Storage Bin Vent
30703002	Wood Waste Storage Bin Loadout
30703096	Sanding/Planning Operations: Specify
30703097	Sanding/Planning Operations: Specify
30703098	Sanding/Planning Operations: Specify
30703099	Sanding/Planning Operations: Specify

Fugitive Emissions

30788801	Specify in Comments Field
30788802	Specify in Comments Field
30788803	Specify in Comments Field
30788804	Specify in Comments Field
30788805	Specify in Comments Field
30788898	Specify in Comments Field

Other Not Classified

30799998	Other Not Classified
30799999	SEE COMMENT **

PULP AND PAPER AND WOOD PRODUCTS

FUEL FIRED EQUIPMENT

Process Heaters

30790001	Distillate Oil (No. 2)
30790002	Residual Oil
30790003	Natural Gas

Incinerators

30790011	Distillate Oil (No. 2)
30790012	Residual Oil
30790013	Natural Gas

Flares

30790021	Distillate Oil (No. 2)
30790022	Residual Oil
30790023	Natural Gas

RUBBER AND MISCELLANEOUS PLASTICS PRODUCTS

RUBBER AND MISCELLANEOUS PLASTICS PRODUCTS

Tire Manufacture

30800101	Undertread and Sidewall Cementing
30800102	Bead Dipping
30800103	Bead Swabbing
30800104	Tire Building
30800105	Tread End Cementing
30800106	Green Tire Spraying
30800107	Tire Curing
30800108	Solvent Mixing
30800109	Solvent Storage
30800110	Solvent Storage
30800120	Undertread and Sidewall Cementing
30800121	Tread End Cementing
30800122	Bead Dipping
30800123	Green Tire Spraying
30800197	Other Not Classified
30800198	Other Not Classified
30800199	Other Not Classified

Tire Retreading

30800501	Tire Buffing Machines
30800699	Other Not Classified

Fabricated Plastics Products

30800701	Plastics Machining: Drilling/ Sanding/ Sawing/etc.
30800702	Mould Release
30800703	Solvent Consumption
30800704	Adhesive Consumption
30800705	Wax Burnout Oven

Fiberglass Resin Products

30800720	General
30800721	Gel Coat-Roll On
30800722	Gel Coat-Spray On
30800723	Resin-General-Roll On
30800724	Resin-General-Spray On

Fabricated Plastics Products

30800799	Other Not Classified

Plastic Foam Products

30800801	Expansion Process via Steam
30800802	Molding
30800803	Bead Storage

Fabricated Plastics Products

30800901	Polystyren: General (Molding)

Process Heaters

30890001	Distillate Oil (No. 2)
30890002	Residual Oil
30890003	Natural Gas
30890004	Liquified Petroleum Gas (LPG)

Incinerators

30890011	Distillate Oil (No. 2)
30890012	Residual Oil
30890013	Natural Gas

Flares

30890023	Natural Gas

Other Not Classified

30899999	Other Not Classified

FABRICATED METAL PRODUCTS

FABRICATED METAL PRODUCTS

General Processes

30900198	Other Not Classified
30900199	Other Not Classified

Abrasive Blasting of Metal Parts

30900201	General
30900202	Sand Abrasive
30900203	Slag Abrasive
30900204	Garnet Abrasive
30900205	Steel Grit Abrasive
30900206	Walnut Shell Abrasive
30900207	Shotblast w/ Air
30900208	Shotblast w/o Air
30900298	General
30900299	General

Abrasive Cleaning of Metal Parts

30900301	Brush Cleaning
30900302	Tumble Cleaning
30900303	Polishing
30900304	Buffing

Electroplating Operations

30901001	General: Entire Process
30901097	Other Not Classified
30901098	Other Not Classified
30901099	SEE COMMENT **

Conversion Coating of Metal Products

30901101	Alkaline Cleaning Bath
30901102	Acid Cleaning Bath (Pickling)
30901103	Anodizing Kettle
30901104	Rinsing/Finishing
30901199	Other Not Classified

Chemical Milling of Metal Products

30901501	Milling Tank

Metal Pipe Coating of Metal Parts

30901601	Asphalt Dipping
30901602	Pipe Spinning
30901603	Pipe Wrapping
30901604	Coal Tar/Asphalt Melting Kettle
30901605	Asphalt Dipping
30901606	Pipe Spinning
30901607	Pipe Wrapping

NOT CLASSIFIED

30902099	SEE COMMENT **

Drum Cleaning/Reclamation

30902501	Drum Burning Furnace

Machining Operations

30903004	SPECIFY MATERIA**
30903005	Sawing: Specify Material in Comments
30903006	Honing: Specify Material in Comments
30903099	SEE COMMENT **

Metal Deposition Processes

30904001	Metallizing: Wire Atomization and Spraying
30904010	Thermal Spraying of Powdered Metal
30904020	Plasma Arc Spraying of Powdered Metal
30904030	Tinning: Batch Process

Porcelain Enamel/Ceramic Glaze Spraying

30906001	Spray Booth
30906099	Spray Booth

Fugitive Emissions

30988801	Specify in Comments Field
30988802	Specify in Comments Field
30988803	Specify in Comments Field
30988804	Specify in Comments Field
30988805	Specify in Comments Field

Process Heaters

30990001	Distillate Oil (No. 2)
30990002	Residual Oil
30990003	Natural Gas

FABRICATED METAL PRODUCTS

FABRICATED METAL PRODUCTS

Incinerators

30990011	Distillate Oil (No. 2)
30990012	Residual Oil
30990013	Natural Gas

Flares

30990023	Natural Gas

Other Not Classified

30999997	Other Not Classified
30999998	Other Not Classified
30999999	Other Not Classified

OIL AND GAS PRODUCTION

OIL AND GAS PRODUCTION

Crude Oil Production

31000101	Complete Well: Fugitive Emissions
31000102	Miscellaneous Well: General
31000103	Wells-Rod Pumps
31000104	Crude Oil Sumps
31000105	Crude Oil Pits
31000199	Processing Operations: Not Classified

Natural Gas Production

31000201	Gas Sweeting: Amine Process
31000202	Gas Stripping Operations
31000203	Compressors
31000204	Wells
31000205	Flares
31000206	Gas Lift
31000207	Valves: Fugitive Emissions
31000299	Other Not Classified

Process Heaters

31000401	Distillate Oil (No. 2)
31000402	Residual Oil
31000403	Crude Oil
31000404	Natural Gas
31000405	Process Gas

Steam Generators

31000411	Distillate Oil (No. 2)
31000412	Residual Oil
31000413	Crude Oil
31000414	Natural Gas
31000415	Process Gas

Fugitive Emissions

31088801	Specify in Comments Field
31088802	Specify in Comments Field
31088803	Specify in Comments Field
31088804	Specify in Comments Field
31088805	Specify in Comments Field

BUILDING CONSTRUCTION

BUILDING CONSTRUCTION

Construction: Building Contractors

31100101	Site Preparation: Topsoil Removal
31100102	Site Preparation: Earth Moving (Cut & Fill)
31100103	Site Preparation: Aggregate Hauling (on dirt)
31100199	Other Not Classified

Construction: Demolition of Structures

31100201	Mechanical or Explosive Dismemberment
31100202	Mechanical or Explosive Dismemberment
31100203	Debris Loading
31100204	Debris Loading
31100205	On-Site Truck Traffic

Construction: Demolition of Structures

31100206	On-Site Truck Traffic

Construction: Special Trade Contract

31100299	Other Not Classified

MACHINERY, MISCELLANEOUS

MACHINERY, MISCELLANEOUS

Miscellaneous Machinery

31299999	Other Not Classified

ELECTRICAL EQUIPMENT

ELECTRICAL EQUIPMENT

Electrical Windings Reclamation

31307001	Single Chamber Incinerator/Oven
31307002	Multiple Chamber Incinerator/Oven

Process Heaters

31390001	Distillate Oil (No. 2)
31390002	Residual Oil
31390003	Natural Gas

Other Not Classified

31399999	Other Not Classified

TRANSPORTATION EQUIPMENT

TRANSPORTATION EQUIPMENT

Automobiles/Truck Assembly Operations

31400901	Solder Joint Grinding

Brake Shoe Debonding

31401001	Single Chamber Incinerator
31401002	Multiple Chamber Incinerator

Auto Body Shredding

31401101	Primary Metal Recovery Line
31401102	Secondary Metal Recovery Line

Other Not Classified

31499999	Other Not Classified

PHOTOGRAPHIC EQUIPMENT

PHOTOGRAPHIC EQUIPMENT

Photocopying Equipment Mfg.

31501001	Resin Transfer/Storage
31501002	Toner Classification
31501003	Toner (Carbon Black) Grinding

HEALTH SERVICES

HEALTH SERVICES

Hospitals

31502001	Sterilization w/ Ethylene Oxide
31502002	Sterilization w/Freon
31502003	Sterilization w/ Formaldehyde

LEATHER AND LEATHER PRODUCTS

LEATHER AND LEATHER PRODUCTS

Other Not Classified

32099997	Other Not Classified
32099998	Other Not Classified
32099999	Other Not Classified

TEXTILE PRODUCTS

TEXTILE PRODUCTS

Miscellaneous General Fabric Operations

33000101	Yarn Preparation / Bleaching
33000102	Printing
33000103	Polyester Thread Production
33000104	Tenter Frames: Heat Setting
33000105	Carding
33000198	Other Not Classified
33000199	Other Not Classified

TEXTILE PRODUCTS

TEXTILE PRODUCTS

Rubberized Fabric

33000201	Impregnation: General
33000202	Wet Coating: GENERAL **
33000203	Hot Melt Coating: GENERAL **
33000211	Impregnation
33000212	Wet Coating
33000213	Hot Melt Coating
33000214	Wet Coating Mixing

Other Not Classified

33000297	Other Not Classified
33000298	Other Not Classified
33000299	Other Not Classified

Carpet Operations

33000399	Other Not Classified

Fabric Finishing

33000499	Other Not Classified
33000599	Other Not Classified

Fugitive Emissions

33088801	Specify in Comments Field
33088802	Specify in Comments Field
33088803	Specify in Comments Field
33088804	Specify in Comments Field
33088805	Specify in Comments Field

PRINTING AND PBULISHING

TYPESETTING

Typesetting (Lead Remelting)

36000101	Remelting (Lead Emissions Only)

IN-PROCESS FUEL USE

IN-PROCESS FUEL USE

Anthracite Coal

39000189	General
39000199	General

Bituminous Coal

39000201	Cement Kiln/Dryer
39000203	Lime Kiln

Subbituminous Coal

39000288	General

Bituminous Coal

39000289	General
39000299	General

Lignite

39000389	General
39000399	General

Residual Oil

39000402	Cement Kiln/Dryer
39000403	Lime Kiln
39000489	General
39000499	General

Distillate Oil

39000501	ASPHALT DRYER **
39000502	Cement Kiln/Dryer
39000503	Lime Kiln
39000589	General
39000598	General
39000599	General

Natural Gas

39000602	Cement Kiln/Dryer
39000603	Lime Kiln
39000605	METAL MELTING **
39000689	General
39000699	General

IN-PROCESS FUEL USE

IN-PROCESS FUEL USE

Process Gas

39000701	Coke Oven or Blast Furnace
39000702	Coke Oven Gas
39000788	General
39000789	Coke Oven Gas
39000797	General
39000798	General
39000799	General

Coke

39000801	MINERAL WOOL FU**

Wood

39000889	General

Coke

39000899	General

LPG

39000989	General

Wood

39000999	General

Liquified Petroleum Gas (LPG)

39001089	General
39001099	General

Solid Waste

39001299	General

Liquid Waste

39001389	General
39001399	General

MISCELLANEOUS MANUFACTURING INDUSTRIES

MISCELLANEOUS MANUFACTURING INDUSTRIES

Process Heaters

39990001	Distillate Oil (No. 2)
39990002	Residual Oil
39990003	Natural Gas
39990004	Process Gas

Incinerators

39990011	Distillate Oil (No. 2)
39990012	Residual Oil
39990013	Natural Gas
39990014	Process Gas

Flares

39990021	Distillate Oil (No. 2)
39990022	Residual Oil
39990023	Natural Gas
39990024	Process Gas

Miscellaneous Industrial Processes

39999993	Other Not Classified
39999994	Other Not Classified
39999995	Other Not Classified
39999996	Other Not Classified
39999998	Other Not Classified
39999999	SEE COMMENT **

ORGANIC SOLVENT EVAPORATION

DRY CLEANING

Dry Cleaning

40100101	Perchloroethylene
40100102	Stoddard (Petroleum Solvent)
40100103	Perchloroethylene
40100104	Stoddard (Petroleum Solvent)
40100105	Trichloro trifluoroethane (Freon)
40100106	Tri chloro trifluoroethane (Freon)
40100198	Other Not Classified
40100199	Other (not classified) **

ORGANIC SOLVENT EVAPORATION

DEGREASING

Open-Top Vapor Degreasing

40100201	Stoddard (Petroleum Solvent)
40100202	1,1,1-Trichloroethane (Methyl Chloroform)
40100203	Perchloroethylene
40100204	Methylene Chloride
40100205	Trichloroethylene
40100206	Toluene
40100207	Tri chloro trifluoroethane (Freon)
40100208	Chlorosolve
40100209	Butyl Acetate
40100215	Entire Unit
40100216	Entire Unit
40100217	Entire Unit
40100297	Other Not Classified
40100299	Other Not Classified

Conveyorized Vapor Degreasing

40100221	Stoddard (Petroleum Solvent)
40100222	1,1,1-Tri chloroethane (Methyl Chloroform)
40100223	Perchloroethylene
40100224	Methylene Chloride
40100225	Trichloroethylene
40100235	Entire Unit: w/ Vaporized Solvent
40100236	Entire Unit: w/ Non-boiling Solvent
40100298	Other Not Classified

Degreasing Units - General

40100251	Stoddard (Petroleum Solvent)
40100252	1,1,1-Trichloroethane (Methyl Chloroform)
40100253	Perchloroethylene
40100254	Methylene Chloride
40100255	Trichloroethylene
40100256	Toluene
40100257	Trichlorotrifluoroethane (Freon)
40100258	Trichlorofluoromethane
40100259	1,1,1-Tri chloroethane (Methyl Chloroform)
40100295	Other Not Classified
40100296	Other Not Classified

Cold Solvent Cleaning/Stripping

40100301	Methanol
40100302	Methylene Chloride
40100303	Stoddard (Petroleum Solvent)
40100304	Perchloroethylene
40100305	1,1,1-Trichloroethane (Methyl Chloroform)
40100306	Trichloroethylene
40100307	Isopropyl Alcohol
40100308	MEK
40100309	Freon
40100310	Acetone
40100335	Entire Unit
40100336	Entire Unit
40100398	Other Not Classified
40100399	Other Not Classified

Knit Fabric Scouring w/ Chlorinated Solv

40100401	Perchloroethylene
40100499	Other Not Classified

Fugitive Emissions

40188801	Specify in Comments Field
40188802	Specify in Comments Field
40188803	Specify in Comments Field
40188804	Specify in Comments Field
40188805	Specify in Comments Field
40188898	Specify in Comments Field

SURFACE COATING OPERATIONS

SURFACE COATING OPERATIONS

Surface Coating Application - General

40200101	Paint: Solvent-Base
40200110	Paint: Solvent-Base
40200201	Paint: Water-Base
40200210	Paint: Water-Base
40200301	Varnish/Shellac: General
40200310	Varnish/Shellac: General
40200401	Lacquer: General
40200410	Lacquer: General
40200501	Enamel: General
40200510	Enamel: General
40200601	Primer: General
40200610	Primer: General

SURFACE COATING OPERATIONS

SURFACE COATING OPERATIONS

Surface Coating Application - General

40200701	Adhesive Application: General
40200706	Adhesive: Solvent Mixing
40200707	Adhesive: Solvent Storage
40200710	Adhesive: General

Coating Oven

40200801	General
40200802	DRIED < 175F **
40200803	BAKED > 175F **
40200810	General
40200898	General
40200899	SEE COMMENT **

Thinning Solvents

40200901	General: Specify in Comments
40200902	Acetone
40200903	Butyl Acetate
40200904	Butyl Alcohol
40200905	Carbitol
40200906	Cellosolve
40200907	Cellosolve Acetate
40200908	Dimethyl Formamide
40200909	Ethyl Acetate
40200910	Ethyl Alcohol
40200911	Gasoline
40200912	Isopropyl Alcohol
40200913	Isopropyl Acetate
40200914	Kerosene
40200915	Lactol Spirits
40200916	Methyl Acetate
40200917	Methyl Alcohol
40200918	Methyl Ethyl Ketone
40200919	Methyl Isobutyl Ketone
40200920	Mineral Spirits
40200921	Naphtha
40200922	Toluene
40200923	Varsol
40200924	Xylene
40200925	Benzene
40200926	Turpentine
40200927	Hexylene Glycol
40200928	Ethylene Oxide
40200929	1,1,1-Trichloroethane (Methyl Chloroform)
40200930	Methylene Chloride
40200931	Perchloroethylene
40200998	General: Specify in Comments

Coating Oven Heater

40201001	Natural Gas
40201002	Distillate Oil
40201003	Residual Oil
40201004	Liquified Petroleum Gas (LPG)

Fabric Coating

40201101	Coating Operation
40201103	Coating Mixing
40201104	Coating Storage
40201105	Equipment Cleanup

Fabric Printing

40201111	Fabric Printing: Roller
40201112	Fabric Printing: Roller
40201113	Fabric Printing: Rotary Screen
40201114	Fabric Printing: Rotary Screen
40201115	Fabric Printing: Flat Screen
40201116	Fabric Printing: Flat Screen
40201199	Other Not Classified

Fabric Dyeing

40201201	Dye Application: General
40201210	Dye Application: General

Paper Coating

40201301	Coating Operation
40201303	Coating Mixing
40201304	Coating Storage
40201305	Equipment Cleanup
40201399	Other Not Classified

Surface Coating of Large Appliances

40201401	Prime Coating Operation
40201402	Cleaning / Pretreatment
40201403	Coating Mixing
40201404	Coating Storage
40201405	Equipment Cleanup
40201406	Topcoat Spray
40201431	Coating Line: General
40201432	Prime Air Spray
40201433	Prime Electrostatic Spray

SURFACE COATING OPERATIONS

SURFACE COATING OPERATIONS

Surface Coating of Large Appliances

40201434	Prime Flow Coat
40201435	Prime Dip Coat
40201436	Prime Electro-Deposition
40201437	Top Air Spray
40201438	Top Electrostatic Spray
40201499	Other Not Classified

Magnet Wire Surface Coating

40201501	Coating/Application /Curing
40201502	Cleaning/ Pretreatment
40201503	Coating Mixing
40201504	Coating Storage
40201505	Equipment Cleanup
40201531	Coating Line: General
40201599	Other Not Classified

Surface Coating of Autos & Light Trucks

40201601	Prime Application/Electo-Deposition/Dip /Spray
40201602	Cleaning / Pretreatment
40201603	Coating Mixing
40201604	Coating Storage
40201605	Equipment Cleanup
40201606	Topcoat Operation
40201619	Prime Surfacing Operation
40201620	Repair Topcoat Application Area

Surface Coating of Automobiles

40201621	Prime Coating: Solvent-Borne
40201622	Prime Coating: Electro-Deposition
40201623	Guide Coating: Solvent-Borne
40201624	Guide Coating: Water-Borne
40201625	Topcoat: Solvent-Borne
40201626	Topcoat: Water-Borne

Surface Coating of Light Trucks

40201627	Prime Coating: Solvent-Borne
40201628	Prime Coating: Electro-Deposition
40201629	Guide Coating: Solvent-Borne
40201630	Guide Coating: Water-Borne
40201631	Topcoat: Solvent-Borne
40201632	Topcoat: Water-Borne
40201699	Other Not Classified

Metal Can Coating

40201702	Cleaning / Pretreatment
40201703	Coating Mixing
40201704	Coating Storage
40201705	Equipment Cleanup
40201721	Two Piece and Exterior Base Coating
40201722	Interior Spray Coating
40201723	Sheet Base Coating (Interior)
40201724	Sheet Base Coating (Exterior)
40201725	Side Seam Spray Coating
40201726	End Sealing Compound
40201727	Lithography
40201728	Over Varnish
40201731	Three-piece Can Sheet Basecoating
40201732	Three-piece Can Sheet Lithographic Coating Line
40201733	Three-piece Beverage Can-Side Seam Spray Coating
40201734	Three-piece Beverage Can Interior Body Spray Coat
40201735	Two-piece Can Coating Line
40201736	Two-piece Can End Sealing Compound
40201799	Other Not Classified

Metal Coil Coating

40201801	Prime Coating Application
40201803	Solvent Mixing
40201804	Solvent Storage
40201805	Equipment Cleanup
40201806	Finish Coating
40201899	Other Not Classified

Wood Furniture Surface Coating

40201901	Coating Operation
40201903	Coating Mixing
40201904	Coating Storage
40201999	Other Not Classified

Metal Furniture Surface Coating

40202001	Coating Operation
40202002	Cleaning / Pretreatment
40202003	Coating Mixing
40202004	Coating Storage
40202005	Equipment Cleanup
40202031	Single Spray Line: General
40202032	Spray Dip Line: General

SURFACE COATING OPERATIONS

SURFACE COATING OPERATIONS

Metal Furniture Surface Coating

40202033	Spray High Solids Coating
40202034	Spray Water-Borne Coating
40202099	Other Not Classified

Surface Coating of Flatwood Products

40202101	Base Coat
40202103	Coating Mixing
40202104	Coating Storage
40202105	Equipment Cleanup
40202106	Topcoat
40202107	Filler
40202108	Sealer
40202109	Inks
40202131	Water-Borne Coating
40202132	Solvent-Borne Coating
40202133	Ultraviolet Coating
40202199	Other Not Classified

Surface Coating of Plastic Parts

40202201	Coating Operation
40202202	Cleaning / Pretreatment
40202203	Coating Mixing
40202204	Coating Storage
40202205	Equipment Cleanup
40202299	Other Not Classified

Surface Coating of Large Ships.

40202301	Prime Coating Operation
40202302	Cleaning / Pretreatment
40202303	Coating Mixing
40202304	Coating Storage
40202305	Equipment Cleanup
40202306	Topcoat Operation
40202399	Other Not Classified

Surface Coating of Large Aircraft

40202401	Prime Coating Operation
40202402	Cleaning / Pretreatment
40202403	Coating Mixing
40202404	Coating Storage
40202405	Equipment Cleanup
40202406	Topcoat Operation
40202499	Other Not Classified

Surface Coating of Misc. Metal Parts

40202501	Coating Operation
40202502	Cleaning / Pretreatment
40202503	Coating Mixing
40202504	Coating Storage
40202505	Equipment Cleanup
40202531	Conveyor Single Flow
40202532	Conveyor Single Dip
40202533	Conveyor Single Spray
40202534	Conveyor Two Coat, Flow and Spray
40202535	Conveyor Two Coat, Dip and Spray
40202536	Conveyor Two Coat, Spray
40202537	Manual Two Coat, Spray and Air Dry
40202599	Other Not Classified

Surface Coating of Steel Drums

40202601	Coating Operation
40202602	Cleaning / Pretreatment
40202603	Coating Mixing
40202604	Coating Storage
40202605	Equipment Cleanup
40202606	Interior Coating
40202607	Exterior Coating
40202699	Specify in Comments Field

Fugitive Emissions

40288801	Specify in Comments Field
40288802	Specify in Comments Field
40288803	Specify in Comments Field
40288804	Specify in Comments Field
40288805	Specify in Comments Field

Incinerator/Afterburner

40290011	Distillate Oil
40290012	Residual Oil
40290013	Natural Gas

Flares

40290023	Natural Gas

SURFACE COATING OPERATIONS

SURFACE COATING OPERATIONS

Surface Coating - Miscellaneous

40299995	Specify in Comments Field
40299996	Specify in Comments Field
40299997	Specify in Comments Field
40299998	Specify in Comments Field
40299999	SEE COMMENT **

PETROLEUM PRODUCT STORAGE (REFINERIES OIL AND GAS FIELDS ONLY)

PETROLEUM PRODUCT STORAGE (REFINERIES OIL AND GAS FIELDS ONLY)

Fixed Roof Tanks (67,000 BBL. Capacity)

40301001	Gasoline RVP 13: Breathing Loss
40301002	Gasoline RVP 10: Breathing Loss
40301003	Gasoline RVP 7: Breathing Loss
40301010	Crude Oil RVP 5: Breathing Loss
40301013	Jet Naphtha (JP-4): Breathing Loss
40301016	Jet Kerosene: Breathing Loss
40301019	Distillate Fuel #2: Breathing Loss
40301097	Specify Liquid: Breathing Loss

Fixed Roof Tanks (250,000 BBL. Capacity)

40301004	Gasoline RVP 13: Breathing Loss
40301005	Gasoline RVP 10: Breathing Loss
40301006	Gasoline RVP 7: Breathing Loss
40301011	Crude Oil RVP 5: Breathing Loss
40301014	Jet Naphtha (JP-4): Breathing Loss
40301017	Jet Kerosene: Breathing Loss
40301020	Distillate Fuel #2: Breathing Loss
40301098	Specify Liquid: Breathing Loss

Fixed Roof Tanks (Tank Dia. Independent)

40301007	Gasoline RVP 13: Working Loss
40301008	Gasoline RVP 10: Working Loss
40301009	Gasoline RVP 7: Working Loss
40301012	Crude Oil RVP 5: Working Loss
40301015	Jet Naphtha (JP-4): Working Loss
40301018	Jet Kerosene: Working Loss
40301021	Distillate Fuel #2: Working Loss
40301099	Specify Liquid: Working Loss

Float Roof Tanks (67,000 BBl. Tank Size)

40301101	Gasoline RVP 13: Standing Loss
40301102	Gasoline RVP 10: Standing Loss
40301103	Gasoline RVP 7: Standing Loss
40301107	Gasoline RVP13 / RVP10/RVP7: Withdrawal Loss
40301109	Crude Oil RVP 5: Standing Loss
40301111	Jet Naphtha (JP-4): Standing Loss
40301113	Jet Kerosene: Standing Loss
40301115	Distillate Fuel #2: Standing Loss
40301198	Specify Liquid. Standing Loss

Float Roof Tanks(250,000 BBl. Tank Size)

40301104	Gasoline RVP 13: Standing Loss
40301105	Gasoline RVP 10: Standing Loss
40301106	Gasoline RVP 7: Standing Loss
40301108	Gasoline RVP13 / RVP10/RVP7: Withdrawal Loss
40301110	Crude Oil RVP 5: Standing Loss
40301112	Jet Naphtha (JP-4): Standing Loss
40301114	Jet Kerosene: Standing Loss
40301116	Distillate Fuel #2: Standing Loss
40301199	Specify Liquid: Standing Loss

Floating Roof Tanks (Withdrawal Loss)

40301117	Crude Oil RVP 5
40301118	Jet Naphtha (JP-4)
40301119	Jet Kerosene
40301120	Distillate Fuel #2
40301197	Specify Liquid: Withdrawal Loss

TANKS WITH EXTERNAL FLOATING ROOF

Primary Seal

40301130	Specify Liquid: Standing Loss
40301131	Gasoline: Standing Loss
40301132	Crude Oil: Standing Loss
40301133	Jet Naphtha (JP-4): Standing Loss
40301134	Jet Kerosene: Standing Loss
40301135	Distillate Fuel #2: Standing Loss

Secondary Seal

40301140	Specify Liquid: Standing Loss
40301141	Gasoline: Standing Loss
40301142	Crude Oil: Standing Loss
40301143	Jet Naphtha (JP-4): Standing Loss

PETROLEUM PRODUCT STORAGE (REFINERIES OIL AND GAS FIELDS ONLY)

TANKS WITH EXTERNAL FLOATING ROOF

Secondary Seal

40301144	Jet Kerosene: Standing Loss
40301145	Distillate Fuel #2: Standing Loss

PETROLEUM PRODUCT STORAGE (REFINERIES OIL AND GAS FIELDS ONLY)

Tanks w/ Internal Floating Roofs

40301150	Specify Liquid: Standing Loss
40301151	Gasoline: Standing Loss
40301152	Crude Oil: Standing Loss
40301153	Jet Naphtha (JP-4): Standing Loss
40301154	Jet Kerosene: Standing Loss
40301155	Distillate Fuel #2: Standing Loss

Variable Vapor Space (10,500 BBl. Capacity)

40301201	Gasoline RVP 13: Filling Loss
40301202	Gasoline RVP 10: Filling Loss
40301203	Gasoline RVP 7: Filling Loss
40301204	Jet Naphtha (JP-4): Filling Loss
40301205	Jet Kerosene: Filling Loss
40301206	Distillate Fuel #2: Filling Loss
40301207	Benzene: Filling Loss
40301299	Specify Liquid: Filling Loss

Fugitive Emissions

40388801	Specify in Comments Field
40388802	Specify in Comments Field
40388803	Specify in Comments Field
40388804	Specify in Comments Field
40388805	Specify in Comments Field

NOT CLASSIFIED

40399999	SEE COMMENT **

BULK TERMINALS/PLANTS

PETROLEUM STORAGE TANKS

Fixed Roof Tanks (67,000 BBL. Capacity)

40400101	Gasoline RVP 13: Breathing Loss
40400102	Gasoline RVP 10: Breathing Loss
40400103	Gasoline RVP 7: Breathing Loss

Floating Roof Tanks (67,000 BBL. Capacity)

40400110	Gasoline RVP 13: Standing Loss
40400111	Gasoline RVP 10: Standing Loss
40400112	Gasoline RVP 7: Standing Loss
40400116	Gasoline RVP13 / RVP10/RVP7: Withdrawal Loss

Fixed Roof Tanks (67,000 BBL. Capacity)

40400201	Gasoline RVP 13: Breathing Loss
40400202	Gasoline RVP 10: Breathing Loss
40400203	Gasoline RVP 7: Breathing Loss

Floating Roof Tanks (67,000 BBL. Capacity)

40400207	Gasoline RVP 13: Standing Loss
40400208	Gasoline RVP 10: Standing Loss
40400209	Gasoline RVP 7: Standing Loss
40400210	Gasoline RVP13 / RVP10/RVP7: Withdrawal Loss

Fixed Roof Tanks (250,000 BBL. Capacity)

40400104	Gasoline RVP 13: Breathing Loss
40400105	Gasoline RVP 10: Breathing Loss
40400106	Gasoline RVP 7: Breathing Loss

Floating Roof Tanks (250,000 BBL. Capacity)

40400113	Gasoline RVP 13: Standing Loss
40400114	Gasoline RVP 10: Standing Loss
40400115	Gasoline RVP 7: Standing Loss
40400117	Gasoline RVP13 / RVP10/RVP7: Withdrawal Loss

Fixed Roof Tanks (Tank Dia. Independent)

40400107	Gasoline RVP 13: Working Loss
40400108	Gasoline RVP 10: Working Loss
40400109	Gasoline RVP 7: Working Loss

BULK TERMINALS/PLANTS

PETROLEUM STORAGE TANKS

Fixed Roof Tanks (67,000 BBL. Capacity)

40400204	Gasoline RVP 13: Working Loss
40400205	Gasoline RVP 10: Working Loss
40400206	Gasoline RVP 7: Working Loss

Variable Vapor Space (10,500 BBl. Capacity)

40400118	Gasoline RVP 13: Filling Loss
40400119	Gasoline RVP 10: Filling Loss
40400120	Gasoline RVP 7: Filling Loss
40400211	Gasoline RVP 13: Filling Loss
40400212	Gasoline RVP 10: Filling Loss
40400213	Gasoline RVP 7: Filling Loss

Tank w/ External Float Roof - Primary Seal.

40400130	Specify Liquid: Standing Loss
40400131	Gasoline RVP 13: Standing Loss
40400230	Specify Liquid: Standing Loss
40400231	Gasoline RVP 13: Standing Loss

Tank w/ External Float Roof - Secondary Seal

40400140	Specify Liquid: Standing Loss
40400141	Gasoline RVP 13: Standing Loss
40400240	Specify Liquid: Standing Loss
40400241	Gasoline RVP 13: Standing Loss

Miscellaneous Losses/Leaks

40400151	Valves, Flanges, and Pumps
40400152	Vapor Collection Losses
40400153	Vapor Control Unit Losses
40400154	Tank Truck Vapor Leaks
40400199	Other/not classified **
40400250	Loading Racks
40400251	Valves, Flanges, and Pumps
40400254	Tank Truck Vapor Losses

Tank w/ Internal Float Roof - Primary Seal.

40400160	Specify Liquid: Standing Loss
40400161	Gasoline RVP 13: Standing Loss
40400260	Specify Liquid: Standing Loss
40400261	Gasoline RVP 13: Standing Loss

Tanks w/ Internal Float Roof - Secondary Seal

40400170	Specify Liquid: Standing Loss
40400171	Gasoline RVP 13: Standing Loss
40400270	Specify Liquid: Standing Loss
40400271	Gasoline RVP 13: Standing Loss

Oil Field Storage of Crude Oil

40400301	Fixed Roof Tank: Breathing Loss
40400302	Fixed Roof Tank: Working Loss
40400303	Ext. Float Roof Tank w/ Pri. Seals: Standing Loss
40400304	Ext. Float Roof Tank w/ Sec. Seals: Standing Loss
40400305	Internal Floating Roof Tank: Standing Loss

Underground Tanks

40400401	Gasoline RVP 13: Breathing Loss
40400402	Gasoline RVP 13: Working Loss
40400403	Gasoline RVP 10: Breathing Loss
40400404	Gasoline RVP 10: Working Loss
40400405	Gasoline RVP 7: Breathing Loss
40400406	Gasoline RVP 7: Working Loss
40400407	Crude Oil RVP 5: Breathing Loss
40400408	Crude Oil RVP 5: Working Loss
40400409	Jet Naphtha (JP-4): Breathing Loss
40400410	Jet Naphtha (JP-4): Working Loss
40400411	Jet Kerosene: Breathing Loss
40400412	Jet Kerosene: Working Loss
40400413	Distillate Fuel #2: Breathing Loss
40400414	Distillate Fuel #2: Working Loss
40400497	Specify Liquid: Breathing Loss
40400498	Specify Liquid: Working Loss

PRINTING/PUBLISHING

PRINTING PROCESS

Dryers

40500101	Dryer: General
40500199	Dryer: General

PRINTING/PUBLISHING

PRINTING PROCESS

Printing

40500201	Letter Press: General - 2751
40500211	Letter Press: General - 2751
40500212	Letter Press: General - 2751
40500301	Flexographic: General - 2751
40500311	Flexographic: General - 2751
40500312	Flexographic: General - 2751
40500314	Flexographic: Propyl Alcohol Cleanup
40500401	Lithographic: General - 2752
40500411	Lithographic: General - 2752
40500412	Lithographic: General - 2752
40500413	Lithographic: Isopropyl Alcohol Cleanup
40500414	Flexographic: Propyl Alcohol Cleanup
40500501	Gravure - 2754
40500511	Gravure - 2754
40500512	Gravure - 2754
40500513	Gravure - 2754
40500514	Gravure: Cleanup Solvent General
40500601	Ink Mixing: General
40500701	Solvent Storage: General

Ink Thinning Solvents

40500202	Kerosene
40500203	Mineral Spirits
40500302	Carbitol
40500303	Cellosolve
40500304	Ethyl Alcohol
40500305	Isopropyl Alcohol
40500306	N-Propyl Alcohol
40500307	Naphtha
40500502	Dimethylformamide
40500503	Ethyl Acetate
40500506	Methyl Ethyl Ketone
40500507	Methyl Isobutyl Ketone
40500510	Toluene
40500598	Other Not Classified
40500599	Other Not Classified

Fugitive Emissions

40588801	Specify in Comments Field
40588802	Specify in Comments Field
40588803	Specify in Comments Field
40588804	Specify in Comments Field
40588805	Specify in Comments Field

TRANSPORTATION AND MARKETING OF PETROLEUM PRODUCTS

TANK CARS AND TRUCKS

Normal Service

40600101	GASOLINE-SPLASH **
40600126	GASOLINE-SUBMERGE **
40600130	DIST OIL-SUBMERGE **
40600131	Gasoline: Submerged Loading
40600132	Crude Oil: Submerged Loading
40600133	Jet Naphtha: Submerged Loading
40600134	Kerosene: Submerged Loading
40600135	Distillate Oil: Submerged Loading
40600136	Gasoline: Splash Loading
40600137	Crude Oil: Splash Loading
40600138	Jet Naphtha: Splash Loading
40600139	Kerosene: Splash Loading
40600140	Distillate Oil: Splash Loading

Balanced Service

40600141	Gasoline: Submerged Loading
40600142	Crude Oil: Submerged Loading
40600143	Jet Naphtha: Submerged Loading
40600144	Gasoline: Splash Loading
40600145	Crude Oil: Splash Loading
40600146	Jet Naphtha: Splash Loading

Clean Tanks

40600147	Gasoline: Submerged Loading
40600148	Crude Oil: Submerged Loading
40600149	Jet Naphtha: Submerged Loading
40600160	Kerosene: Submerged Loading
40600161	Distillate Oil: Submerged Loading

Transit Losses

40600162	Gasoline: Loaded w/ Fuel
40600163	Gasoline: Return w/ Vapor

TRANSPORTATION AND MARKETING OF PETROLEUM PRODUCTS

Other Not Classified

40600197	NOT CLASSIFIED **
40600198	NOT CLASSIFIED **
40600199	NOT CLASSIFIED **

TRANSPORTATION AND MARKETING OF PETROLEUM PRODUCTS

TRANSPORTATION AND MARKETING OF PETROLEUM PRODUCTS

Marine Vessels

40600231	Gasoline: Ship Loading-Cleaned & Vapor Free Tanks
40600232	Gasoline: Ocean Barges Loading
40600233	Gasoline: Barge Loading-Cleaned & Vapor Free Tanks
40600234	Ballasted Tank
40600235	Ballasted Tank
40600236	Uncleaned Tanks
40600237	Uncleaned Tanks
40600238	Uncleaned Tanks
40600239	Ballasted Tank Condition
40600240	Average Tank Condition
40600241	Ballesting
40600242	Gasoline: Transit Loss
40600243	Crude Oil: Loading Tankers
40600244	Jet Fuel: Loading Tankers
40600245	Kerosene: Loading Tankers
40600246	Distillate Oil: Loading Tankers
40600248	Crude Oil: Loading Barges
40600249	Jet Fuel: Loading Barges
40600250	Kerosene: Loading Barges
40600251	Distillate Oil: Loading Barges
40600253	Crude Oil: Tanker Ballesting
40600254	Crude Oil: Transit Loss
40600255	Jet Fuel: Transit Loss
40600256	Kerosene: Transit Loss
40600257	Distillate Oil: Transit Loss
40600259	Tanker/Barge Cleaning
40600298	NOT CLASSIFIED **
40600299	NOT CLASSIFIED **

GASOLINE RETAIL OPERATIONS

Stage I

40600301	Splash Filling
40600302	Submerged Filling w/o Controls
40600305	UNLOADING **
40600306	Balanced Submerged Filling
40600307	Underground Tank Breathing & Emptying
40600399	NOT CLASSIFIED **

FILLING VEHICLE GAS TANKS

Stage II

40600401	Vapor Loss w/o Controls
40600402	Liquid Spill Loss w/o Controls
40600403	Vapor Loss w/o Controls
40600499	NOT CLASSIFIED **

TRANSPORTATION AND MARKETING OF PETROLEUM PRODUCTS

Fugitive Emissions

40688801	Specify in Comments Field
40688802	Specify in Comments Field
40688803	Specify in Comments Field
40688804	Specify in Comments Field
40688805	Specify in Comments Field

ORGANIC CHEMICAL STORAGE

FIXED ROOF TANKS

Acid Anhydrides

40700401	Acetic Anhydrides: Breathing Loss
40700402	Acetic Anhydrides: Working Loss
40700497	Specify Anhydride: Breathing Loss
40700498	Specify Anhydride: Working Loss

Alcohols

40700801	N-Butyl Alcohol: Breathing Loss
40700802	N-Butyl Alcohol: Working Loss
40700803	Sec-Butyl Alcohol: Breathing Loss
40700804	Sec-Butyl Alcohol: Working Loss
40700805	Tert-Butyl Alcohol: Breathing Loss
40700806	Tert-Butyl Alcohol: Working Loss
40700807	Cyclohexanol: Breathing Loss
40700808	Cyclohexanol: Working Loss
40700809	Ethyl Alcohol: Breathing Loss
40700810	Ethyl Alcohol: Working Loss
40700811	Isobutyl Alcohol: Breathing Loss
40700812	Isobutyl Alcohol: Working Loss
40700813	Isopropyl Alcohol: Breathing Loss
40700814	Isopropyl Alcohol: Working Loss
40700815	Methyl Alcohol: Breathing Loss
40700816	Methyl Alcohol: Working Loss
40700817	N-Propyl Alcohol: Breathing Loss

ORGANIC CHEMICAL STORAGE

FIXED ROOF TANKS

Alcohols

40700818	N-Propyl Alcohol: Working Loss
40700897	Specify Alcohol: Breathing Loss
40700898	Specify Alcohol: Working Loss

Alkanes (Paraffins)

40701601	N-Decane: Breathing Loss
40701602	N-Decane: Working Loss
40701603	N-Dodecane: Breathing Loss
40701604	N-Dodecane: Working Loss
40701605	N-Heptane: Breathing Loss
40701606	N-Heptane: Working Loss
40701607	Isopentane: Breathing Loss
40701608	Isopentane: Working Loss
40701609	Pentadecane: Breathing Loss
40701610	Pentadecane: Working Loss
40701611	Naphtha: Breathing Loss
40701612	Naphtha: Working Loss
40701613	Petroleum Distillate: Breathing Loss
40701614	Petroleum Distillate: Working Loss
40701697	Specify Alkane: Breathing Loss
40701698	Specify Alkane: Working Loss

Alkenes (Olefins)

40702001	Dodecene: Breathing Loss
40702002	Dodecene: Working Loss
40702003	Heptenes-General: Breathing Loss
40702004	Heptenes-General: Working Loss
40702097	Specify Olefin: Breathing Loss
40702098	Specify Olefin: Working Loss

Amines

40703201	Aniline: Breathing Loss
40703202	Aniline: Working Loss
40703203	Ethanolamines: Breathing Loss
40703204	Ethanolamines: Working Loss
40703205	Ethyleneamines: Breathing Loss
40703206	Ethyleneamines: Working Loss
40703297	Specify Amine: Breathing Loss
40703298	Specify Amine: Working Loss

Aromatics

40703601	Benzene: Breathing Loss
40703602	Benzene: Working Loss
40703603	Cresol: Breathing Loss
40703604	Cresol: Working Loss
40703605	Cumene: Breathing Loss
40703606	Cumene: Working Loss
40703607	Diisopropyl Benzene: Breathing Loss
40703608	Diisopropyl Benzene: Working Loss
40703609	Ethyl Benzene: Breathing Loss
40703610	Ethyl Benzene: Working Loss
40703611	Methyl Styrene: Breathing Loss
40703612	Methyl Styrene: Working Loss
40703613	Styrene: Breathing Loss
40703614	Styrene: Working Loss
40703615	Toluene: Breathing Loss
40703616	Toluene: Working Loss
40703617	m-Xylene: Breathing Loss
40703618	m-Xylene: Working Loss
40703619	o-Xylene: Breathing Loss
40703620	o-Xylene: Working Loss
40703621	p-Xylene: Breathing Loss
40703622	p-Xylene: Working Loss
40703623	Xylenes, Mixed: Breathing Loss
40703624	Xylenes, Mixed: Working Loss
40703697	Specify Aromatic: Breathing Loss
40703698	Specify Aromatic: Working Loss

Carboxylic Acids

40704001	Acetic Acid: Breathing Loss
40704002	Acetic Acid: Working Loss
40704003	Acrylic Acid: Breathing Loss
40704004	Acrylic Acid: Working Loss
40704005	Adipic Acid (Soln): Breathing Loss
40704006	Adipic Acid (Soln): Working Loss
40704007	Formic Acid: Breathing Loss
40704008	Formic Acid: Working Loss
40704009	Propionic Acid: Breathing Loss
40704010	Propionic Acid: Working Loss
40704097	Specify Acid: Breathing Loss
40704098	Specify Acid: Working Loss

Esters

40704401	Butyl Acetate: Breathing Loss
40704402	Butyl Acetate: Working Loss
40704403	Butyl Acrylate: Breathing Loss
40704404	Butyl Acrylate: Working Loss
40704405	Ethyl Acetate: Breathing Loss
40704406	Ethyl Acetate: Working Loss

ORGANIC CHEMICAL STORAGE

FIXED ROOF TANKS

Esters

40704407	Ethyl Acrylate: Breathing Loss
40704408	Ethyl Acrylate: Working Loss
40704409	Isobutyl Acrylate: Breathing Loss
40704410	Isobutyl Acrylate: Working Loss
40704411	Isopropyl Acetate: Breathing Loss
40704412	Isopropyl Acetate: Working Loss
40704413	Methyl Acetate: Breathing Loss
40704414	Methyl Acetate: Working Loss
40704415	Methyl Acrylate: Breathing Loss
40704416	Methyl Acrylate: Working Loss
40704417	Methyl Methacrylate: Breathing Loss
40704418	Methyl Methacrylate: Working Loss
40704419	Vinyl Acetate: Breathing Loss
40704420	Vinyl Acetate: Working Loss
40704421	n-Propyl Acetate: Breathing Loss
40704422	n-Propyl Acetate: Working Loss
40704423	i-Butyl-i-Butyrate: Breathing Loss
40704424	i-Butyl-i-Butyrate: Working Loss
40704497	Specify Ester: Breathing Loss
40704498	Specify Ester: Working Loss

Ethers

40704801	Methyl-tert-Butyl Ether: Breathing Loss
40704802	Methyl-tert-Butyl Ether: Working Loss
40704897	Specify Ether: Breathing Loss
40704898	Specify Ether: Working Loss

Glycol Ethers

40705201	Butyl Carbitol: Breathing Loss
40705202	Butyl Carbitol: Working Loss
40705203	Butyl Cellosolve: Breathing Loss
40705204	Butyl Cellosolve: Working Loss
40705205	Carbitol: Breathing Loss
40705206	Carbitol: Working Loss
40705207	Cellosolve: Breathing Loss
40705208	Cellosolve: Working Loss
40705209	Diethylene Glycol: Breathing Loss
40705210	Diethylene Glycol: Working Loss
40705211	Methyl Carbitol: Breathing Loss
40705212	Methyl Carbitol: Working Loss
40705213	Methyl Cellosolve: Breathing Loss
40705214	Methyl Cellosolve: Working Loss
40705215	Polyethylene Glycol: Breathing Loss
40705216	Polyethylene Glycol: Working Loss
40705217	Triethylene Glycol: Breathing Loss
40705218	Triethylene Glycol: Working Loss
40705297	Specify Glycol Ether: Breathing Loss
40705298	Specify Glycol Ether: Working Loss

Glycols

40705601	1,4-Butanediol: Breathing Loss
40705602	1,4-Butanediol: Working Loss
40705603	Ethylene Glycol: Breathing Loss
40705604	Ethylene Glycol: Working Loss
40705605	Dipropylene Glycol: Breathing Loss
40705606	Dipropylene Glycol: Working Loss
40705607	Glycerol: Breathing Loss
40705608	Glycerol: Working Loss
40705609	Propylene Glycol: Breathing Loss
40705610	Propylene Glycol: Working Loss
40705697	Specify Glycol: Breathing Loss
40705698	Specify Glycol: Working Loss

Halogenated Organics

40706001	Benzyl Chloride: Breathing Loss
40706002	Benzyl Chloride: Working Loss
40706003	Caprolactum (Soln): Breathing Loss
40706004	Caprolactum (Soln): Working Loss
40706005	Carbon Tetrachloride: Breathing Loss
40706006	Carbon Tetrachloride: Working Loss
40706007	Chlorobenzene: Breathing Loss
40706008	Chlorobenzene: Working Loss
40706009	o-Dichlorobenzene: Breathing Loss
40706010	o-Dichlorobenzene: Working Loss
40706011	p-Dichlorobenzene: Breathing Loss
40706012	p-Dichlorobenzene: Working Loss
40706013	Epichlorohydrin: Breathing Loss
40706014	Epichlorohydrin: Working Loss
40706015	Ethylene Dibromide: Breathing Loss
40706016	Ethylene Dibromide: Working Loss
40706017	Ethylene Dichloride: Breathing Loss
40706018	Ethylene Dichloride: Working Loss
40706019	Methylene Chloride: Breathing Loss
40706020	Methylene Chloride: Working Loss
40706021	Perchloroethylene: Breathing Loss
40706022	Perchloroethylene: Working Loss
40706023	Trichloroethylene: Breathing Loss
40706024	Trichloroethylene: Working Loss
40706097	Specify Halogenated Organic: Breathing Loss
40706098	Specify Halogenated Organic: Working Loss

ORGANIC CHEMICAL STORAGE

FIXED ROOF TANKS

Isocyanates

40706401	MDI: Breathing Loss
40706402	MDI: Working Loss
40706403	TDI: Breathing Loss
40706404	TDI: Working Loss
40706497	Specify Isocyanate: Breathing Loss
40706498	Specify Isocyanate: Working Loss

Ketones

40706801	Cyclohexanone: Breathing Loss
40706802	Cyclohexanone: Working Loss
40706813	Methylamyl Ketone: Breathing Loss
40706814	Methylamyl Ketone: Working Loss
40706897	Specify Ketone: Breathing Loss
40706898	Specify Ketone: Working Loss

Nitriles

40707601	Acrylonitrile: Breathing Loss
40707602	Acrylonitrile: Working Loss
40707697	Specify Nitrile: Breathing Loss
40707698	Specify Nitrile: Working Loss

Nitro Compounds

40708001	Nitrobenzene: Breathing Loss
40708002	Nitrobenzene: Working Loss
40708097	Specify in Comments: Breathing Loss
40708098	Specify in Comments: Working Loss

Phenols

40708401	Nonyphenol: Breathing Loss
40708402	Nonyphenol: Working Loss
40708403	Phenol: Breathing Loss
40708404	Phenol: Working Loss
40708497	Specify Phenol: Breathing Loss
40708498	Specify Phenol: Working Loss

FLOATING ROOF TANKS

Aldehydes

40717201	Acetaldehyde: Standing Loss **
40717202	Acetaldehyde: Withdrawal Loss **
40717203	Acrolein: Standing Loss **
40717204	Acrolein: Withdrawal Loss **
40717205	n-Butaldehyde: Standing Loss
40717206	n-Butaldehyde: Withdrawal Loss
40717207	Formalin: Standing Loss
40717208	Formalin: Withdrawal Loss
40717209	Isobutyraldehyde: Standing Loss
40717210	Isobutyraldehyde: Withdrawal Loss
40717211	Propionaldehyde: Standing Loss
40717212	Propionaldehyde: Withdrawal Loss
40717297	Specify Aldehyde: Standing Loss
40717298	Specify Aldehyde: Withdrawal Loss

Alkanes (Paraffins)

40717601	Cyclohexane: Standing Loss
40717602	Cyclohexane: Withdrawal Loss
40717603	n-Hexane: Standing Loss
40717604	n-Hexane: Withdrawal Loss
40717605	n-Pentane: Standing Loss
40717606	n-Pentane: Withdrawal Loss
40717697	Specify Alkane: Standing Loss
40717698	Specify Alkane: Withdrawal Loss

Alkenes (Olefins)

40718001	Isoprene: Standing Loss
40718002	Isoprene: Withdrawal Loss
40718003	Methylallene: Standing Loss
40718004	Methylallene: Withdrawal Loss
40718005	1-Pentene: Standing Loss
40718006	1-Pentene: Withdrawal Loss
40718007	Piperylene: Standing Loss
40718008	Piperylene: Withdrawal Loss
40718009	Cyclopentene: Standing Loss
40718010	Cyclopentene: Withdrawal Loss
40718097	Specify Olefin: Standing Loss
40718098	Specify Olefin: Withdrawal Loss

Ethers

40720801	Ethyl Ether: Standing Loss
40720802	Ethyl Ether: Withdrawal Loss
40720803	Propylene Oxide: Standing Loss
40720804	Propylene Oxide: Withdrawal Loss
40720897	Specify Ether: Standing Loss
40720898	Specify Ether: Withdrawal Loss

Halogenated Organics

40722001	Carbon Tetrachloride: Standing Loss
40722002	Carbon Tetrachloride: Withdrawal Loss

ORGANIC CHEMICAL STORAGE

FLOATING ROOF TANKS

Halogenated Organics

40722003	Chloroform: Standing Loss
40722004	Chloroform: Withdrawal Loss
40722005	Ethylene Dichloride: Standing Loss
40722006	Ethylene Dichloride: Withdrawal Loss
40722007	Methylene Chloride: Standing Loss
40722008	Methylene Chloride: Withdrawal Loss
40722009	1,1,1-Trichlorethylene: Standing Loss
40722010	1,1,1-Trichlorethylene: Withdrawal Loss
40722097	Specify Halogenated VOC: Standing Loss
40722098	Specify Halogenated VOC: Withdrawal Loss

Ketones

40722801	Acetone: Standing Loss
40722802	Acetone: Withdrawal Loss
40722803	Methyl Ethyl Ketone: Standing Loss
40722804	Methyl Ethyl Ketone: Withdrawal Loss
40722805	Methyl Isobutyl Ketone: Standing Loss
40722806	Methyl Isobutyl Ketone: Withdrawal Loss
40722897	Specify Ketone: Standing Loss
40722898	Specify Ketone: Withdrawal Loss

Mercaptans (Thiols)

40723201	Ethyl Mercaptan: Standing Loss
40723202	Ethyl Mercaptan: Withdrawal Loss
40723297	Specify Mercaptan: Standing Loss
40723298	Specify Mercaptan: Withdrawal Loss

PRESSURE TANKS

Aldehydes

40781201	Acetaldehyde: Withdrawal Loss
40781202	Acrolein: Withdrawal Loss

Alkanes (Paraffins)

40781601	Ethane: Withdrawal Loss
40781602	Butane: Withdrawal Loss
40781603	Methane: Withdrawal Loss
40781604	Natural Gas: Withdrawal Loss
40781605	Propane: Withdrawal Loss
40781606	Isopentane: Withdrawal Loss
40781607	n-Pentane: Withdrawal Loss
40781699	Specify Gas: Withdrawal Loss

Alkenes (Olefins)

40782001	1,3-Butadiene: Withdrawal Loss
40782002	1-Butene: Withdrawal Loss
40782003	2-Butene: Withdrawal Loss
40782004	Ethylene: Withdrawal Loss
40782005	Isobutylene: Withdrawal Loss
40782006	Propylene: Withdrawal Loss
40782007	Isoprene: Withdrawal Loss
40782008	Methylallene: Withdrawal Loss
40782009	1-Pentene: Withdrawal Loss
40782010	Piperylene: Withdrawal Loss
40782011	Cyclopentene: Withdrawal Loss
40782099	Specify Alkene: Withdrawal Loss

Alkynes (Acetylenes)

40782401	Acetylene: Withdrawal Loss
40782499	Specify Alkyne: Withdrawal Loss

Amines

40783201	Methylamine: Withdrawal Loss
40783202	Dimethylamine: Withdrawal Loss
40783203	Trimethyamine: Withdrawal Loss
40783299	Specify Amine: Withdrawal Loss

Ethers

40784801	Ethylene Oxide: Withdrawal Loss
40784899	Specify Ether: Withdrawal Loss

Halogenated Organics

40786001	Ethyl Chloride: Withdrawal Loss
40786002	Methyl Chloride: Withdrawal Loss
40786003	Phosgene: Withdrawal Loss
40786004	Vinyl Chloride: Withdrawal Loss
40786099	Specify Halogenated VOC: Withdrawal Loss

ORGANIC CHEMICAL STORAGE

PRESSURE TANKS

Isocyanates

40786401	Methyl Isocyanate: Withdrawal Loss
40786499	Specify Isocyanate: Withdrawal Loss

Mercaptans (Thiols)

40787201	Methyl Mercaptan: Withdrawal Loss
40787299	Specify Mercaptan: Withdrawal Loss

FIXED ROOF TANKS

Miscellaneous

40799997	Specify in Comments
40799998	Specify in Comments

ORGANIC CHEMICAL TRANSPORTATION

ORGANIC CHEMICAL TRANSPORTATION

Specify Liquid

40899995	Cars/Trucks: Loading Rack
40899997	Marine Vessels: Loading Rack
40899999	Loading Rack

ORGANIC SOLVENT EVAPORTAION

MISCELLANEOUS

Solvent Extraction Processes

49000101	Petroleum Naphtha (Stoddard)
49000102	MEK
49000103	MIBK
49000104	Furfural
49000105	Trichloroethylene
49000199	Other Not Classified

Waste Solvent Recovery Operations

49000201	Storage Tank Vent
49000202	Condenser Vent
49000203	Incinerator Stack
49000204	Solvent Spillage
49000205	Solvent Loading
49000206	Fugitive Leaks
49000299	Other Not Classified

Rail Car Cleaning

49000301	Ethylene Glycol
49000302	Chlorobenzene
49000303	o-Dichlorobenzene
49000304	Cresote
49000399	Other Not Classified

Tank Truck Cleaning

49000401	Acetone
49000402	Perchloroethylene
49000403	Methyl Methacrylate
49000404	Phenol
49000405	Propylene Glycol
49000499	Other Not Classified

Air Stripping Tower

49000501	Trichloroethylene
49000502	Perchloroethylene
49000503	1,1,1-Trichloroethane
49000504	Chloroform
49000599	Specify Solvent in Comments

ORGANIC SOLVENT EVAPORATION - MISCELLANEOUS

FUEL FIRED EQUIPMENT

Incinerators

49090011	Distillate Oil (No. 2)
49090012	Residual Oil
49090013	Natural Gas

Flares

49090021	Distillate Oil (No. 2)
49090022	Residual Oil
49090023	Natural Gas

ORGANIC SOLVENT EVAPORATION

MISCELLANEOUS

Miscellaneous Volatile Organic Compound Evaporation

49099998	Identify the Process and Solvent in Comments
49099999	Identify the Process and Solvent in Comments

SOLID WASTE DISPOSAL

GOVERNMENT

Municipal Incineration

50100101	Starved Air: Multiple Chamber
50100102	Mass Burn: Single Chamber
50100103	Refuse Derived Fuel

Open Burning Dump

50100201	General Refuse
50100202	Vegetation Only

Landfill Dump

50100401	Unpave Road Traffic

Other Incineration

50100505	Pathological
50100506	Sludge
50100507	Conical Design (Tee Pee) Municipal Refuse
50100508	Conical Design (Tee Pee) Wood Refuse
50100510	Trench Burner: Wood
50100511	Trench Burner: Tires
50100512	Trench Burner: Refuse
50100515	Sludge: Multiple Hearth
50100516	Sludge: Fluidized Bed
50100517	Sludge: Electric Infrared

Fire Fighting

50100601	Structure: Jet Fuel
50100602	Structure: Distillate Oil
50100603	Structure: Kerosene
50100604	Structure: Wood Pallets

Sewage Treatment

50100701	Entire Plant
50100702	Primary Settling Tank
50100703	Secondary Settling Tank
50100704	Aeration Tank

Auxillary Fuel/No Emissions

50190005	Distillate Oil
50190006	Natural Gas
50190010	Liquified Petroleum Gas (LPG)

COMMERCIAL/INSTITUTIONAL

Incineration: General

50200101	Multiple Chamber
50200102	Single Chamber
50200103	Controlled Air
50200104	Conical Design (Tee Pee) Municipal Refuse
50200105	Conical Design (Tee Pee) Wood Refuse

Open Burning

50200201	Wood
50200202	Refuse

Apartment Incineration

50200301	Flue Fed
50200302	Flue Fed w/ Afterburner and Draft Controls

Incineration: Special Purpose

50200505	Pathological
50200506	Sludge

Landfill Dump

50200601	Waste Gas Flares
50200602	Municipal: Fugitive Emissions

Asbestos Removal

50200901	General

SOLID WASTE DISPOSAL

COMMERCIAL/INSTITUTIONAL

Auxillary Fuel/No Emissions

50290005	Distillate Oil
50290006	Natural Gas
50290010	Liquified Petroleum Gas (LPG)

INDUSTRIAL

Incineration

50300101	Multiple Chamber
50300102	Single Chamber
50300103	Controlled Air
50300104	Conical Design (Tee Pee) Municipal Refuse
50300105	Conical Design (Tee Pee) Wood Refuse
50300106	Trench Burner: Wood
50300107	Trench Burner: Tires
50300108	Auto Body Componets
50300109	Trench Burner: Refuse

Open Burning

50300201	Wood/Vegatation / Leaves
50300202	Refuse
50300203	Auto Body Componets
50300204	Coal Refuse Piles
50300205	Rocket Propellant

Incineration

50300501	Hazardous Waste
50300506	Sludge

Landfill Dump

50300601	Waste Gas Flares
50300602	Liquid Waste Disposal
50300603	Hazardous: Fugitive Emissions

Liquid Waste

50300701	General

Treatment, Storage, Disposal Facilities

50300801	Surface Impoundment: Fugitive Emissions
50300810	Waste Piles: Fugitive Emissions
50300820	Land Treatment: Fugitive Emissions
50300830	Containers: Fugitive Emissions

Asbestos Removal

50300901	General

Auxillary Fuel/No Emissions

50390005	Distillate Oil
50390006	Natural Gas
50390010	Liquified Petroleum Gas (LPG)

REPORT USER FEEDBACK AND MAIL KEY REGISTRATION

The U.S. Environmental Protection Agency's (EPA) Office of Air Quality Planning and Standards (OAQPS) provides technical support to assist State and local air pollution control agencies in developing and implementing air toxics programs. One way that OAQPS provides assistance to agencies and other interested individuals is by compiling and publishing emission data for agencies and others who are interested in locating potential emitters of toxic air compounds and in making preliminary estimates of toxic air emissions. These reports published by EPA are introductory documents only, and they are not intended to provide exact estimates of air toxics releases from specific facilities. EPA will update and expand these reports and publish new documents as toxic air emissions data are obtained. Your comments on the usefulness of this report and availability of additional data which could be used to extend and improve it, are important input to this process. Please provide any information to us that will allow us to improve these reports. The format below is provided for your convenience.

Please check the appropriate blanks and mail to:

Pollutant Characterization Section
Noncriteria Pollutant Programs Branch (MD-15)
U.S. Environmental Protection Agency
Research Triangle Park, North Carolina 27711

_____ I have additional air toxics emission data that would help EPA. Please contact me.

_____ Other comments on the report or needs for similar reports. _____

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PHONE NUMBER: ( )_____

REPORT TITLE: _____

FormAMS.011

TECHNICAL REPORT DATA
(Please read Instructions on the reverse before completing)

1. REPORT NO.	2.	3. RECIPIENT'S ACCESSION NO.
EPA-450/2-90-011		

4. TITLE AND SUBTITLE	5. REPORT DATE
Toxic Air Pollutant Emission Factors - A Compilation For Selected Air Toxic Compounds And Sources, Second Edition	October 1990
	6. PERFORMING ORGANIZATION CODE

7. AUTHOR(S)	8. PERFORMING ORGANIZATION REPORT NO.
Anne A. Pope, U.S. EPA & Garry R. Brooks, Patrick F. Carfagna, & Susan K. Lynch, Radian	

9. PERFORMING ORGANIZATION NAME AND ADDRESS	10. PROGRAM ELEMENT NO.
Radian Corporation Post Office Box 13000 Research Triangle Park, NC 27709	11. CONTRACT/GRANT NO. 68-02-4392

12. SPONSORING AGENCY NAME AND ADDRESS	13. TYPE OF REPORT AND PERIOD COVERED
U.S. Environmental Protection Agency OAR, OAQPS, AQMD, NPPB, PCS (MD-15) Research Triangle Park, NC 27711	Final
	14. SPONSORING AGENCY CODE

15. SUPPLEMENTARY NOTES
EPA Project Officer: Anne A. Pope

16. ABSTRACT

This report presents the second edition of the Toxic Air Pollutant Emission Factor Compilation that contains emission factors for selected air toxic compounds and sources, and associates the factors to levels of source activity. The emission factors, compiled from a review of the literature, are sorted by pollutant and source. Each factor is identified by pollutant name, CAS number, process and emission source descriptions, SIC code and SCC's. This second edition revises and expands the report, Toxic Air Pollutant Emission Factors - A Compilation For Selected Air Toxic Compounds And Sources, Second Edition, EPA-450/2-88-006a. A software system, XATEF, containing the factors, has been developed for easy access and updating of the data. Use of the system is explained in the EPA report, Crosswalk/Air Toxic Emission Factor Data Base Management System User's Manual. EPA is making available the system and data base records to agency users upon request.

The purpose of this report is to offer a technical service to air pollution control agencies in performing preliminary estimates of air toxics emissions. The emission factors are not intended to provide exact estimates of releases of air toxics from specific facilities.

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
Air Toxics Emission Factors Toxic Emissions		

18. DISTRIBUTION STATEMENT	19. SECURITY CLASS (This Report)	21. NO. OF PAGES
Unlimited	Unclassified	822
	20. SECURITY CLASS (This page)	22. PRICE
	Unclassified	

EPA Form 2220-1 (Rev. 4-77) PREVIOUS EDITION IS OBSOLETE